1919.

QUEENSLAND.

ANNUAL REPORT

OF THE

DEPARTMENT OF AGRICULTURE AND STOCK

FOR

THE YEAR 1918-1919.

PRESENTED TO BOTH HOUSES OF PARLIAMENT BY COMMAND.

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REPORT OF THE DEPARTMENT OF AGRICULTURE AND STOCK FOR THE YEAR 1918-19.

TO THE HONOURABLE THE SECRETARY FOR AGRICULTURE AND STOCK.

SIR,—I have the honour to submit my Report upon this Department for the year ending the 30th June, 1919.

The long, dry periods of 1918 had, there is no doubt, a greater effect upon the farming and dairying community than the drought of 1902, which, although more protracted, broke in the spring months of the year, and the change enabled the production of summer crops. Last year, in the farming areas, the season did not break until the spring months had passed and, consequently, the sowing time for many of the summer crops. In the early months of 1918 the season promised well; good rains fell, and, there being no anticipation of a season of drought, and the value for produce being high, crops were sold and little or no provision was made for the winter months. This time the drought was not confined to Queensland, but was felt to a greater or less degree in the Southern States, and as a consequence the market price of fodder exceeded all preceding values, and at the time of writing it has not fallen to any appreciable extent; in some lines it is still rising, and there will be no great decline for a time to come. It is to the South that Queensland looks in times of stress and of shortage; but in 1918 that source of relief was not available, and, to add to the difficulties, the want of shipping prevented a supply being obtained from foreign countries whence help in certain lines can, under normal conditions, be looked for.

The loss in stock through drought causes was heavy, although not so heavy as might have been expected, but the true position in this respect will not be known until the statistics for 1919 are available, the worst time of the drought being in this year. This was in a measure compensated by the high prices obtained, which, as in the case of farm produce, attained higher values than before known. Among stockowners the greatest burden fell upon the dairymen who had not made provision and had to purchase fodder to keep their stock alive. One result has been a somewhat greater interest in the erection of silos in the dairying districts; but the movement has not been so general as the need calls for, and this notwithstanding the offers of help that have been made for advances and for the assistance of the officers of the department with regard to the nature of the erection and by the preparation of plans and specifications.

The tables given last year are repeated, indicating with some degree of accuracy the proportion of our population engaged in agricultural and pastoral occupations to those engaged in town occupations; and from them it does not seem that the proportion of the rural population is increasing at the rate it should do:—

—	Number of Owners Engaged in Cultivation.	Proportion to Population.
1914	22,048	3·258
1915	22,095	3·255
1916	23,077	3·447
1917	23,053	3·32
1918	22,098	3·18

CATTLE.

Year.	Number of Persons Owning up to 300 Head.	Proportion to Population.	Number of Persons Owning 301 to 1,000 Head.	Proportion to Population.	Number of Persons Owning over 1,000 Head.	Proportion to Population.
1913	36,481	5·526	921	·139	734	·111
1914	37,955	5·608	983	·145	778	·114
1915	38,437	5·663	943	·139	671	·098
1916	38,015	5·679	1,010	·150	702	·104
1917	38,720	5·59	1,145	·16	799	·11
1918	40,560	5·84	1,356	·195	819	·117

SHEEP.

Year.	Number of Owners up to 1,000.	Proportion to Population.	Number of Owners from 1,001 to 5,000.	Proportion to Population.	Number of Owners from 5,001 to 10,000.	Proportion to Population.	Number of Owners Owning over 10,000.	Proportion to Population.
1913	1,700	·257	813	·123	341	·0516	511	·077
1914	1,873	·276	940	·138	349	·0515	557	·082
1915	2,447	·360	934	·137	339	·0499	371	·054
1916	2,428	·362	888	·132	301	·044	369	·055
1917	2,393	·345	898	·129	317	·045	400	·057
1918	2,320	·334	938	·135	327	·047	445	·064

Details of the work under the Brands Acts are given in the Report of the Registrar; but it may be mentioned that the figures for the year show a decrease, especially in the number of three-piece brands, cancelled brands, and symbol brands allotted.

The demand for cattle and sheep earmarks required arrangements to relieve the situation; and to do so certain districts have been subdivided, so that the same mark may be registered in each subdivision instead of in each district as formerly.

Possibly, arising from the high values of stock, there have been many cases of alleged cattle stealing, and heavy fines have been imposed for offences under the branding laws.

The Marsupials Destruction Act—which was in existence from 1877 until the 31st December, 1918, excepting the period from 1st March, 1891, to the end of 1895, during which time no legislation was in operation—gave place, on the first day of this year, to the Dingo and Marsupial Destruction Act, under which the payment of subsidy by the Government for the destruction of marsupials entirely disappeared in favour of limiting the subsidy to the destruction of dingoes and foxes. During the years of the Marsupials Destruction Act, bonus for destruction was paid by the Marsupial Boards upon 7,935,175 kangaroos and wallaroos, 17,041,685 wallabies, 1,197,799 bandicoots, paddamelons, and kangaroo rats, and 517,489 dingoes and foxes. To attain this destruction a total bonus of £759,845 was paid, of which the Government contributed by way of subsidy £299,382, or, roughly, one-third. Yet, notwithstanding the enormous destruction and the favourable market for skins for some years past, the pests—if such they may be termed—have not, excepting kangaroos and wallaroos, become so diminished as to prevent objections to the withdrawal of subsidy from marsupials. The dingoes and foxes, on the other hand, have increased alarmingly and to such an extent that sheepowners have cried out loudly at the apathy of the cattleowners in the work of destruction, the losses of sheep by dingoes and foxes in 1917 being set down at 229,740 head, or 9·56 of the whole number.

Under the Acts that have expired there was much territory that was not covered by the operation of a Board, and it was obvious, if the new Act was to be successful in the destruction of dingoes and foxes, that the whole State should be covered, so that there should be no secure breeding-grounds. This has been done, or is in the process of being carried out; and as a result there will be seven new Boards, which have been named—The East Moreton, Wide Bay, Gogango, Bowen, Kennedy, Cook, and Burke; and some of the old Boards have undergone an adjustment of boundaries or absorption with other Boards. Some exception has been taken to the bonus for foxes being, at the minimum, the same as for dingoes upon the grounds of the value of their skins and that they are not so dangerous or so numerous. The first reason is true, and cases are known where people have been caught breeding foxes for the sake of the bonus and the value of the skins; but there is no doubt that the sooner they are exterminated, the better it will be for stockholders and farmers; and the high bonus will accomplish that end much quicker than a low bonus.

A deputation to the Minister from the Queensland Farmers' Union asked that the Government should distribute seed grain again this year, the reasons given being that many farmers were without seed and had not the cash to pay for it if they could get it. While admitting the large amount of outstanding indebtedness by the farmers on account of former distributions, the Department urged that a further concession be made, and, for a better security, that an agreement for repayment be drawn up in a business-like way—that is, a lien on the crop; a recommendation that was strengthened by a consultation of the members of the deputation with several bankers and men managing financial companies. Following this, representations were made by several members of Parliament, representing grain-growing centres, advocating distribution upon the ground of scarcity of seed; and the Press in Brisbane and on the Downs also took the matter up on the same lines. Arrangements were made for a distribution, with the security of a lien upon crops and a proportional payment from dairying returns, or other security, for the repayment of the debt that might be incurred.

In 1916 the quantity of seed distributed was 87,785 bushels, and, anticipating that for this year the quantity required would be less, the total purchase did not exceed 36,342 bushels of seed wheat and 15,378 bushels of malting barley, of which 7,902 bushels of wheat were obtained in Queensland. It was intended to supply seed oats also; but, in consequence of the difficulties with shipping owing to quarantine on account of the influenza and the limit of the planting season, it became necessary to abandon this phase of the business.

Announcements were made in the Brisbane papers and also in the newspapers in the grain-growing districts; and in the latter advertisements were inserted from time to time to keep the matter before the farmers. A copy of the announcement of the distribution was also sent to members of Parliament interested, with a request that the facts might be made known to their constituents.

Every reasonable attempt was made to make the public aware of the distribution, but the results have been very disappointing in the light of the representations made that the farmers were without seed and unable to obtain it.

The following comparison of figures will illustrate the position:—

	Number of Farmers who made Preliminary Application.	Number of Farmers Supplied with Seed.	Quantity of Seed Distributed. Bushels.
1916 ..	1,809	1,389	87,785
1919 ..	803	448	16,794

From these figures it will be seen that there is a considerable difference between the number who made a preliminary application and the number who, complying with the conditions, received the grain asked for. Another great difference will be noticed between the total quantity of the distributions in 1919 and the total asked for in the preliminary applications this year. As a result, the Department found itself with a large quantity of good seed grain upon its hands for disposal to the best advantage; and for a quantity of graded wheat sold by auction in Toowoomba, the high value of 11s. 4d. was obtained, but the average of the sale was 9s. 3d. per bushel.

A curious experience of this distribution in comparison with that of former years was the number of people who paid cash for their seed instead of accepting the terms that were offered. They numbered 248 people, leaving only 200 who received seed on terms. At the time of writing —notwithstanding that more wheat and barley had, owing to the misleading information and advice that was given to the Department, to be sold to millers and others than was distributed to farmers for seed—the net loss stood at £1,229; and it may be taken that a fair proportion of this loss was caused by the heavy expenditure incurred through the seed arriving during heavy weather, and to its being stacked upon the wharf without shelter. The consequence was that several hundred bags were wetted, and the contents had to be spread, dried, and rebagged in clean bags.

POOLS.

The pool conditions imposed by the Commonwealth under the War Precautions Act with regard to certain products were continued throughout the year; but the incidence of them was by no means satisfactory so far as this State was concerned. Under the wheat pool—admission to which was denied to Queensland—a miller carrying on business here did not have freedom for his purchases, and had to obtain the consent of the pool; and this notwithstanding that there was no shortage of wheat in Australia. This complaint has no reference to the prices fixed for the millers' product; but it does not seem right that permission should have to be sought elsewhere for carrying on a business for home necessities when there was no scarcity of the raw material. Comparatively, the conditions with regard to the interstate dairy produce were also unsatisfactory. The War Precautions Act was applied in this case, and dairy produce had to be inspected and marked by Federal officers; but no good reason has yet been forthcoming as to the necessity for so doing. Trade between States under the Constitution is free, and the War caused no position under which the supply of dairy produce was endangered or threatened with shortage; and yet the manufacturers were subjected to administration that had no practical meaning or result. From another aspect the butter pool was unsatisfactory to Queensland insofar that the prices fixed did not always apply equitably as between States. Producers in the Southern States were able to sell their produce at the fixed price, while the manufacturers here had to accept that price less freight. Under normal conditions of trade nothing could be said upon that score; but, if the meaning of the word "pool" means share-and-share alike, Queensland manufacturers should not have been penalised to the advantage of the Southern manufacturers. The disclosures in the Federal Parliament concerning pools and the effect of them, added to the experience of producers and manufacturers in Queensland, would not seem to encourage further adventure into that kind of business now that the War is over and trade is returning to normal avenues.

Though not a pool matter, the manner in which this State was treated in relation to the jam and canned fruit contracts does not appear to have been altogether equitable, in comparison with the proportion allotted to other States. This State being pre-eminently the State for the manufacture of pineapple jam, it might reasonably be expected that the manufacturers here would at least have had the option of the larger share of this commodity; but that was not the case, the greater proportion of the allotment of pineapple jam being secured by Southern traders, without any opportunity being given to the Queensland manufacturers to say they could or could not undertake the business. The result was that Queensland-grown pulp was sent South to be made into jam to the advantage and benefit of the Southern manufacturers.

Another matter of discontent here among the manufacturers, who had obtained orders for jam outside of the sale to the Federal Government, was the regulation that the concession for sugar could only be obtained by manufacturers of jam ordered through the Commonwealth Government. This restriction obtained for some time, and repeated remonstrances were necessary before it was removed; and while it lasted an

important advantage was held by the Southern manufacturers. It does not seem right that privileges should have been withheld from traders just because they did not trade through a particular channel.

During the early years of the War, the foodstuffs that could be made available for the Imperial Government were negotiated through the Agent-General; but later all sales were assumed by the Federal Government. The prior system was much more satisfactory from a business point of view to the State and to the producers also; and now that normal conditions are returning it is to be hoped that the interference of the Commonwealth in the channels of trade will be discontinued. During the War no objection could in any way be raised, but surely now that Peace has been declared the producers and merchants ought to be allowed to pursue their callings without being required to deal through an avenue that may not be satisfactory to them; and it cannot be argued that the Commonwealth Government secured better values than did the States when dealing through their Agents-General, nor can it have better knowledge of the markets than the exporters. A tendency of a central control is to set up a standard that is approved or wanted by the State in which the central control is situated, and as it would be a standard for the whole might be quite unacceptable to another part of the Commonwealth, where the trade is, in part or the whole, with quite a different part of the Globe to that of the Central State, unless indeed the standard is limited entirely to the question of fitness for the food of man or beast, which would be a proper standard to set up. If an exporter of foodstuffs is regulated as regards quality according to a standard, so should be the exporter of wine, coal, or any other goods whatever that are exported; and it would be far better to allow exporters to stand or fall by their markets of which they have the best knowledge and acquaintance.

A large oversea trade arose during the War in canned pineapples and in marmalade and jam; and the merchants are striving hard to maintain the reputation gained in the British market for those goods and, consequently, maintain and increase the trade. Though, perhaps, owing to the circumstances of the times there may be some little laxity in the standard of quality accepted in the market, it may be taken as an axiom that no firm can retain its position unless its goods are up to sample and of uniform quality. Queensland, through its Dairy Act, secured for the producers and manufacturers the high reputation our products now hold oversea; and at the time that Act came into operation the export trade was comparatively no greater than this trade is now. It would seem, therefore, that the time is present when the danger of indifferent manufactures should be warded against, and action of a legislative character should be enacted to ensure the export of only the best materials. Outside of unscrupulous traders, the manufacture of canned fruits and jam is an industry that can in a manner be carried out by isolated small plants upon farms or orchards; and, though the manufactured article may be excellent for home consumption, it is not made to meet the requirements of the export trade, and the inclusion of such articles in export consignments might do harm to the trade.

The English market demands now, as it did in 1908—as it was then reported by the Director of Fruit Culture—that the fruit in cans shall be of uniform size and quality, and that there shall be uniformity in packing and density of the syrup, so that buyers can have confidence in what they are buying. Somewhat similar conditions would apply to jam and marmalade; and the Director of Fruit Culture is of opinion that definite percentages of sugar and moisture should be specified.

Another matter in this trade that needs control—and the Department has already been approached upon the subject by the can manufacturers—is the size of containers for each of the articles of produce mentioned.

The value of these commodities in the oversea markets is now at a profitable figure, and it is not anticipated that the margin will be below that figure; therefore it would seem that the regulation of the trade should now be undertaken, and this could be done by an Act of Parliament upon the lines of the Dairy Produce Act.

AGRICULTURAL SOCIETIES.

The subsidy paid to Agricultural Societies is intended, according to the intention of the original grant of the endowment, for the promotion of agriculture; but present-day opinion is in the direction of subsidy for the holding of shows, which is not altogether the same. There are sixty-five societies in all receiving subsidy; and of them but one or two go further in their operations than an annual show, and are apathetic as regards agriculture during the balance of the year. There are many avenues open, and none better than the lines followed by the Agricultural Bureaus of South Australia, which are very active and of great value to the State. These Bureaus absolutely debar discussion on political and religious matters, and are entirely educational in relation to the improvement of agriculture and generally to raise the social and educational status of the

man on the land and their families. Meetings are held at regular periods throughout the year to discuss agricultural matters of interest to the district; and there is a custom of meeting sometimes at farmers homesteads when a particular opportunity happens. In addition, the social side is not overlooked, and gatherings which include the families are held at stated intervals.

Beyond this Agricultural Societies, if founded upon a proper basis, could with advantage to their members become co-operative societies and do business upon wholesale lines to the profit of their members. Stud animals, ploughs, implements, machinery, and fruit packing and canning could be dealt in; and there would be no obstacle to adventuring into many other directions, especially in marketing. In America in 1908 there was only one co-operative society for the purchase of stud bulls; now the number has risen to over 30. In 1915 there were 32 associations, who owned 3,600 cows and 94 bulls. Denmark has many associations of this kind, as have also many other countries; and if a small country can derive benefit, surely it would, in a new country like this, be to the advantage of the Agricultural Societies to justify their existence by doing something more to promote agriculture in the area in which they operate than by holding an annual show only.

This Department has on several occasions endeavoured to interest the public in the need for legislation to control the use of stallions, in order that the degeneration of the horse stock in this State may be stopped as much as possible. A Bill that was presented to Parliament, but without success, included provision for inspection by a qualified Board, of horses for public service and the establishment of premium stallions. The need for this control arises from the fact that many entires travelling the country lack the material that goes to raise the standard of the breed in Queensland, and it is not unknown that the service of a so-called blood horse or a Clydesdale can be obtained for as low a figure as £1 a mare. These animals are for the most part in the hands of the small holder, and are in competition with the owners of animals of good quality, the service of which would help towards improvement, but are prevented by the preference for the nondescript horses referred to. Explanation has before been given of the system for premium stallions in force in Great Britain; but it has apparently been found wanting in some respects with regard to the object of the system, and it has been superseded by the Horse Breeding Act of 1918, which makes it illegal to travel a stallion for service after 1st January, 1920, unless it has been licensed by the Board of Agriculture as being sound and suitable for breeding purposes. The Government has received the greatest support from the Horse Breeding Societies on the ground that the Act is the consummation of the Reports of the several Commissions and Committees during the past fifty years bearing upon the various aspects of the horse-breeding industry, which have always drawn attention to the great harm done by the use of unsound stallions. The United States of America already have laws in operation requiring registration and license before a stallion can be offered for public service, and it is necessary that the license shall be prominently displayed at the place where the horse is held. No horse-owner or exporter of horses will argue that our horse stock is of the quality it was a quarter of a century ago, or even at a later time; and complaints are heard from exporters of the difficulty in obtaining animals to meet the demand of their markets. The remedy is at hand and easy of application by following the lead of the United States and of Great Britain; and if our trade with Asia and our reputation are to be maintained, it is necessary that some action be taken, and that before long, otherwise the deterioration will continue.

RACING.

In the Report of the Scottish Commission, which was here in 1910-11, in the following comment on the Australian horse-racing, it is stated:—"It appeared to the Commission that, if horse-racing were to have a redeeming feature at all through being of service in improving the light-legged horses of Australia, light weight and sprinting over short distances should be eliminated and long distances and heavy weights substituted."

Racing has always been accepted as being part of the system for the development of the horses of a country, and Racing Clubs, when they desire a concession, are not slow in using that argument as a reason for their existence and for the concession, whatever it may be, that is desired; but they do not carry their arguments into practice, and the opinion given by the Scottish Commission is certainly truer to-day than when the opinion was uttered.

Short-distance racing does not tend to develop the stamina of horses, and consequently does not help to improve the breed; and it would seem to be without argument that the forced preparation of young horses for sprinting races must be detrimental.

Racing nowadays is nothing more than an entertainment to attract the public, and from the plane of helping towards the improvement of the breed of horses has declined to the level of the theatre or the picture show. In other States and countries the position is not as it is in Queensland. For instance, in contrast, only three out of the twenty-four great races in

Great Britain are under a mile; and in South Australia, in two days' racing of the South Australian Jockey Club, of twelve races, seven were 1 mile and over, ranging up to 2½ miles, five races only being under 1 mile. Here it is very different. The racing programmes of six clubs, covering sixty-two races, have been investigated, and of these forty-eight races were under 1 mile, generally for 6 or 7 furlongs, and fourteen for 1 mile and over, but the excess rarely exceeded 1 furlong, and only one race of 2½ miles being included in that number. The demand for horses of a good stamp is not diminishing; and if Queensland is to maintain the reputation it has gained, there would appear to be evidence of the need for administrative control if racing is to continue as part of the system of the horse-breeding of the State.

SEED TESTING.

The opinion of the public regarding the value to them of the Pure Seeds Act is rapidly changing, and to cope with it, the change and enlargement of the offices and the testing-rooms has not been made too soon. The following table shows the volume of business done since the work was commenced, and it will be seen that for six months of this year the number of tests has exceeded any former year:—

AGRICULTURAL SEEDS TESTED UNDER "THE PURE SEEDS ACTS, 1913-1914."
1915-1919.

Numbec of Samples Tested.	Year	NUMBER OF SAMPLES TESTED AND FOUND—		NUMBER OF SAMPLES CONDEMNED ON ACCOUNT OF—	
		Standard.	Low Grade.	Impurities.	Germination.
301	1915	162	29	35	75
759	1916	505	152	11	91
706	1917	487	124	6	89
760	1918	472	145	29	114
817	1919*	489	170	36	122
3,343	Totals	2,115	620	117	491
	In percentage	63·3	18·5	3·5	14·7

* Six months to 30th June.

VEGETABLE SEEDS TESTED UNDER "THE PURE SEEDS ACTS, 1913-14."
1915-1919.

Number of Samples Tested.	Year.	NUMBER OF SAMPLES TESTED AND FOUND—		NUMBER OF SAMPLES CONDEMNED ON ACCOUNT OF—	
		Standard.	Low Grade.	Impurities.	Germination.
166	1915	93	18	8·	47
236	1916	161	32	2	41
314	1917	200	53	3	58
310	1918	206	58	3	43
528	1919*	436	60	2	30
1,554		1,096	221	18	219
		70·5	14·2	1.2	14·1

* Six months to 30th June.

During the year an electric germinator and a cleaning machine were obtained, and these have enabled much better work to be done than formerly.

When operations were first commenced, the Seed Expert noticed that considerable quantities of oversea lucerne seed were landed in Australia and appeared on the local market as Hunter River seed, and was sold at a large profit. This happened in 1916-17; and, though attention was drawn to the practice, and particularly to the danger of the importation of weeds such as Hexham Scent, which are against the interests of dairy farmers, the practice still continues, and of 85 samples of lucerne seed examined last year 21 were of South African origin, and probably each lot represented a ton or more of seed.

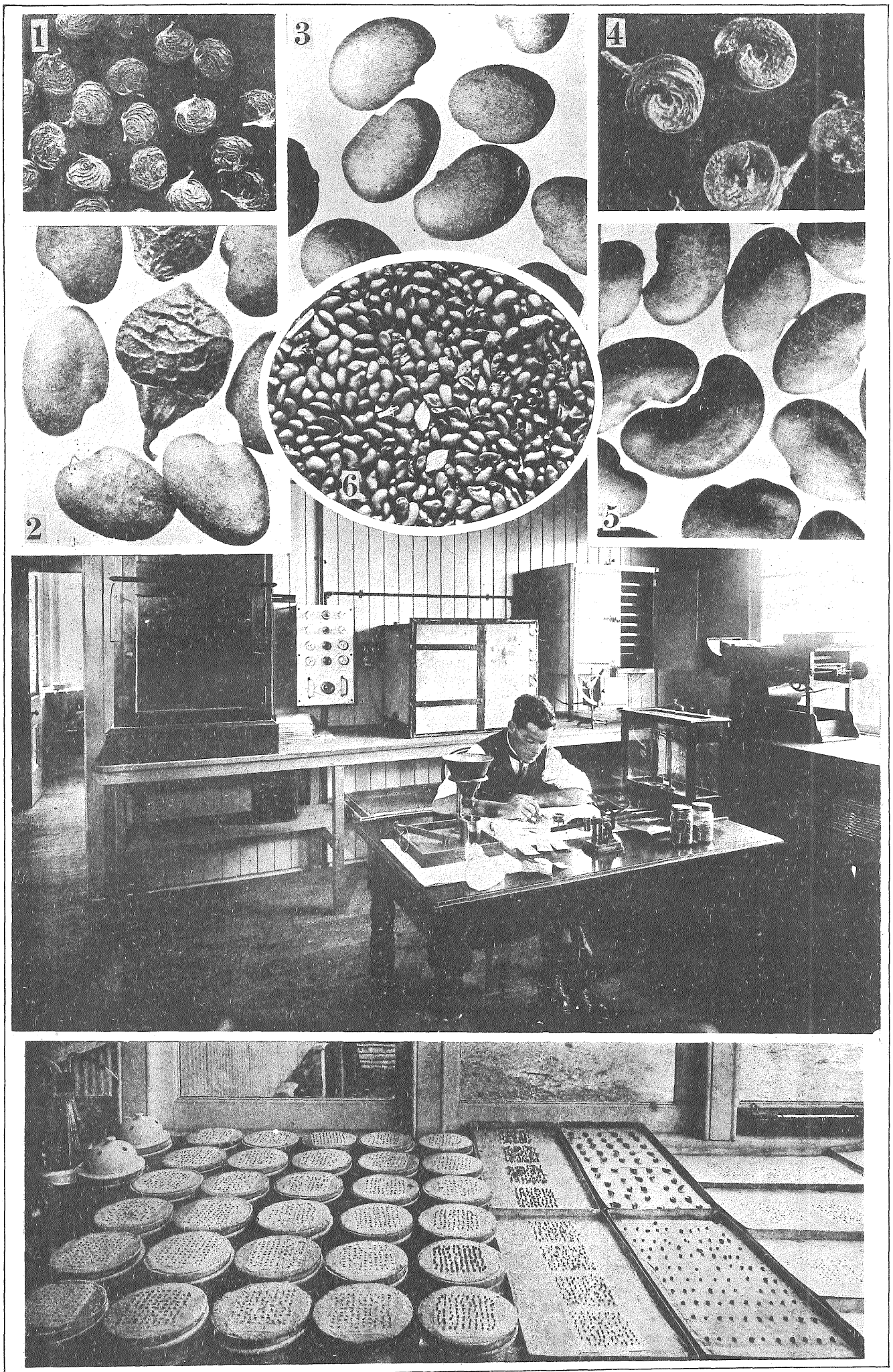
The Regulations under the Pure Seeds Acts require all seeds classed as low grade to be distinctly marked as such, with the germination per cent. clearly and indelibly branded on the bags; all invoices and labels must also give the percentage of germination with date of test. This is most important to both buyer and seller, who should thus be able to fix a value in accordance with the percentage of growth. In the buying of both Rhodes and Paspalum the price per pound of the seed has no relation to its value unless based on the percentage of germination. These points are mentioned, in order to draw attention to these grasses.

Out of the 112 samples of Rhodes tested during the year, only 15 were up to the prescribed standard of 40 per cent. germination, the average growth of these samples being 43 per cent. The prescribed minimum for low grade is 20 per cent., and 53 samples with an average growth of 25·8 per cent. were so classed. The remaining 44 samples did not comply with the Acts on account of germination or impurities.

Paspalum is one of the most difficult seeds to test, and in the past has caused much disappointment by the failure of seed of good appearance to make a stand. As an outcome of these complaints several prosecutions were instituted about a year since, and I am pleased to report that the seed now offered for sale is of much better quality.

America is a large buyer of both Rhodes grass and canary seed, and our merchants would do well to get into direct communication with the States. At present large quantities are sent each year to Sydney; most of this is shipped, after bearing cost of freight and merchants' profits, which should be kept, if possible, within our own State.

Several complaints have been made during the past season as to the quality of the oats offered for sale. These, in nearly every instance,



SEED LABORATORY AND SOME OF THE METHODS ADOPTED FOR TESTING SEEDS UNDER THE PURE SEEDS ACTS.

1. Trefoil Pods.
2. Sweet Clover Seed and Pods.
3. Trefoil Seeds.
6. Lucerne Seed Showing Impurities.
4. Lucerne Pods.
5. Lucerne Seeds.

were purchased in the South by produce merchants, in order to supply the demand for a cheap line of oats. Farmers seldom bother to ask for seed oats, price being in most instances the deciding factor, not quality. Unless buyers distinctly ask for seed, little can be done for the protection of their interests. Three lots of oats offered for sale as seed were found to contain 10·499 per cent., 18·15 per cent., and 19·752 per cent. of weed seeds. In each instance proceedings instituted with success.

Both seed merchants and farmers are availing themselves of the seed laboratory for the identification of weed seeds. During the year under review over 40 lots were sent in to be named; the principal ones being *Sisymbrium orientale* (Oriental Rocket), *Bromus maximus* (Giant Brome), *Melilotus parviflora* (Hexham Scent), *Polygonum convolvulus, Saponaria vaccaria, Cuscuta* (Dodder), *Rumex s.p.* (Dock). These and many other weeds were found in seeds offered for sale as seeds for sowing.

The more general use of seed-cleaning machinery would remove most of them, and farmers would do well to purchase only from those who clean and grade their seeds.

STATE FARMS.

The history of the experiences of farmers during the last year applies also to the State Farms, to which is to be added the heavy rains, flooding, and cyclones in the Central district and in the North.

At the State Farm, Hermitage, the cereal crops failed; but advantage was taken of an improvement in the late season to provide for the shortage generally of farm seed, by laying down milo and other sorghum seed which was supplied to farmers. The sheep held on here gave good returns from the sale of surplus stock and of fat lambs.

There is every probability of this Farm being leased to the Federal Government for a term of years for use as a place of recuperation for returned soldiers; and, if this eventuates, every success should be attained for the object aimed at, as every opportunity is present from a health point of view and from the means for congenial occupation.

At the State Farm, Roma, the teaching that has been pressed for several years of the advantages to be gained in this climate by conserving the soil moisture was again proved. Reference has been made elsewhere of the crop reaped after a very small rainfall during the growing season, and upon a class of soil that the Downs farmer with his magnificent black soil would probably pass by with contempt as a wheat-growing soil. The same may be said of the lucerne grown here, where, notwithstanding the very dry season, five successive cuttings were taken off a patch of alluvial land; but then this land was fallowed before seeding and received a thorough cultivation after each cutting. It is a great pity that farmers from all parts of the State do not take the opportunity that is offered them to a greater extent than they do, and, by visiting the Farm, learn from the manager many things which he is only too willing to impart, and thus learn better methods and the means for greater profits.

The work that has been followed here for many years towards improving the seed wheat grown in Queensland has been continued.

At the State Farm, Warren, the value of the Ayrshire breed of cattle for dairying purposes in the Central district has been fully proved, both in times of hardship and in times of plenty. Mention is made of this because of the objection in the district to this breed being kept upon the Farm, owing to it not being a dual-purpose animal—milk and beef—which breed is favoured in the neighbourhood. Notwithstanding that opinion, the old saying "one cannot serve God and Mammon" applies to dairying; and if a farmer proposes to go in for dairying, he cannot expect to obtain so much profit during the business life of an animal if he expects that animal to serve two purposes. It is true that when past the profitable milking life the heavier animal will bring a higher price at the butcher's block; but the loss of produce during the preceding years will much more than counterbalance the difference. Therefore, it has always been held by this Department that for dairying, a dairy breed that has been proved should only be held. The demand for female cattle from this Farm is improving, and perhaps opinions generally concerning the breed will alter.

The Berkshire pigs grown here are in favour in the district, and there is a good demand for them.

The State Farm, Gindie, had an exceptionally dry year; and the silage conserved proved to be of great value, and so much so that an additional 100-ton silo has been erected here and at Warren to be held as a reserve for stud stock. The herd of purebred Shorthorn cattle has progressed to a stage when the public market can be tested, and some twenty young bulls have seen sold at prices from 50 guineas downwards according to age. This favourable commencement will make the herd well known, and there need be no fear that, under the excellent management of Mr. Burnage, the reputation of the Farm will annually increase, and with it the value of the stock reared on the Farm. Moreover, the herd has been further improved by the addition of 100 heifers from the well-known Belltrees Herd of New South Wales.

The Suffolk breed of horses is steadily increasing, and experience of this breed shows its excellence for farming work here and for our country roads.

About 1,000 head of merino sheep are also carried on this Farm, and during the year have been improved by the use of wellbred Southern rams. A portion of this flock is used for the experiments against the blow-fly; but complete freedom was not attained, owing to a wave of infestation in the latter part of the year, but by the application of preventives the attack was minimised.

At the State Farm, Kairi, about 400 acres were brushed and resown with grass with a satisfactory result. It was at this Farm an unfortunate outbreak of swine fever happened a little over twelve months ago, when it became necessary to slaughter the herd; these have been replaced, and it will now be possible to meet the heavy local demand. At this Farm the dairy breed kept is the Jersey, and an objection similar to that heard from the Central district has been made against the Department—viz., the keeping of a purely dairy breed instead of a dual-purpose cow; but, notwithstanding, the Farm Jerseys have secured the maximum share of prizes at the shows, including a single-entry milking competition which was won with a return of slightly under 19 lb. of butter for the week.

COLLEGE.

A very interesting treatise is given by the Principal of the College, accompanied by diagrams upon rainfall in that area covering monthly averages compiled from a 20-years' record at the College. This information is of particular value to the residents of the Lockyer, because what happened at the College is typical of the whole of that district. That the conservation of fodder is an urgent need is shown by a study of that Report; and the Principal traverses the several points in connection therewith as viewed from the standpoint of a Lockyer resident and of the farmer generally. He urges the collection of reliable statistics annually in relation to periodical production and the requirements of the markets, so that the farmer may be in a better position to judge his needs throughout a year or years, and also to be able to sell his products properly from a business point of view, instead of following the present uncertain custom and having to suffer when, if the information were available, he would be able to make provision. The number of students remains low, as is the case with other Agricultural Colleges in Australia, the cause of which has been the depletion of men for war purposes and the consequent necessity for those of the student age to remain at home to help carry on. In some respects this has not been an unmixed evil, because an opening has been afforded for better attention to those returned soldiers who desire education in agriculture than would have been possible had there been a full roll of students. During the year 46 returned soldiers attended courses of varying duration, and it is expected that this year, when so many men are returning, the number will be increased.

The Winter School for Farmers usually held during the vacation was abandoned last year, owing to the outbreak of influenza, but it was possible to hold the Annual Poultry Conference, at which discussions relating to the industry were dealt with.

The visitors during the year numbered 400, amongst whom were the members of the French Mission.

The Principal voices his regret that there is no general appreciation of the value of systematic education in agriculture and stock, and that the general trend of our educational system is too much in favour of what the towns want and not what the country needs, and is of opinion that something should be done to remedy the discrepancy.

The College suffered severely during the year from drought, and, there being so many valuable stud animals of the different kinds on the premises, the cost of keeping them in condition, with no crops to fall back upon, was very high, but it was cheaper to incur the expense than to lose the animals. With the return of ordinary seasons the Farm area will again be sufficient for the needs of the stock.

In the Report of the Agricultural Chemist, it will be seen that the number of dipping fluids he analysed during the year was considerably less than in the preceding year, the cause of which can be attributed to the portable dip tester now supplied to inspectors. The result of the investigations show that the number of effective fluids is still far too low, only 30 per cent. being found to be of effective strength. Further, the number of samples above 10 lb. of arsenic to 400 gallons of water show that samples are carelessly taken or even fictitious. A greatly increased number of soils were dealt with, and in many cases the soils showed signs of depletion for want of proper fertilising. At the moment, soils from the Queensland Agricultural College and the State Farms are under analysis for comparison with the analyses made twenty years ago.

Owing to the discontinuance by the Customs Department of sending samples of dairy products for analysis under the Commerce Act, the work during the year in this respect was much lessened; but it is to be hoped that the loss is but temporary, as much information of great value

GINDIE STATE FARM.

to the dairying industry is obtained from the investigation of the dairy products for export. An important investigation to ascertain the amount of butter-fat introduced into butter factories and actually attained as commercial butter has been carried out, and is being continued.

Much attention was given by the Agricultural Chemist to the investigation of manufactured stock and poultry foods that are upon the market. The result of the inquiry was published in the "Queensland Agricultural Journal"; but briefly, it may be said with regard to stock foods, that generally these preparations were found to be upon the market at too high a price, and were not true milk substitutes, as it is generally claimed by the manufacturer. Some of the stock foods were found to be actually dangerous and probably fatal if used on stock. Poultry foods as regards value were found, excepting in the case of two preparations which were exorbitant, to be upon the market at fair prices, but the constituents of many of them told a different story, the basis of a large number being spurious pollards consisting chiefly of crushed and damaged weevily wheat—probably the sweepings of ship's holds, the floors of warehouses, and of similar places.

The information thus gained is of particular interest in the light of the legislation which is particularly urged for the control of this market.

The fruit season has been erratic, and the markets have followed suit; but, on the whole, prices have been high, and growers have been benefited accordingly.

A Conference of Growers was held at Palmwoods, out of which an association was formed which has achieved, by organisation, the running of a regular fruit train for the quick delivery of our fruit in the Southern markets. This train was, several years ago, advocated by the Director of Fruit Culture to improve the unsatisfactory condition in which our fruits were carried by the coastal steamers, notwithstanding the many remonstrances that were made; but the time was not then ripe for the success that has now been attained. Up to the 30th June last, 70,927 cases of bananas, 7,448 cases of citrus fruits, and 65,561 cases of pineapples have passed through Brisbane or have been sent from here, to which may be added the collection between here and Wallangarra; indeed, about 45 per cent. of the export to the Southern States have been carried by this means during the six months to the 30th June. A Second Conference of Fruit Growers was also held to form a non-trading and non-political association for the purpose of watching the interests of the fruitgrownig community, at which many matters were discussed—such as fruit cases, manures, grading of fruit, packing, and the best way of dealing with fruit pests.

Many inquiries have been made concerning the successful fruit-fly lure, known as "Harvey's Fruit Fly Lure," and anxiety has been expressed by many who desire to make use of it; but the inventor has not yet placed it upon the market, which he has decided to do as a commercial venture. It is understood, however, that much useful information has been gathered during the year, and that the time is near when the lure will be available for the public.

Experiments have been conducted by the Director of Fruit Culture to ascertain the possibility of protecting the roots of bananas from nematodes. After clearing the suckers from all roots and loose matter, they were dipped in a solution of corrosive sublimate made by dissolving 1 oz. of this material in 6 gallons of water. The suckers were allowed to remain in the solution for two hours, and were then planted without any injury to them. The experiment was successful, for they eventually proved to be of the best producing capabilities and no nematodes have been discovered.

Manuring experiments proved that bananas can be successfully grown upon land depleted of available plant food, or, in other words, worked-out land.

It had been found that citrus trees, that had previously carried good crops, were badly attacked by a borer beetle of the weevil type, and experiments, more or less successful, were made to overcome the attack and restore the trees to their fruitfulness. Details of the experiments, which will be continued this Spring, will be found in the Report of the Director of Fruit Culture herewith; but briefly he has ascertained that, if the roots have not been wholly destroyed, vitality may be restored by quickly-acting manure, and that the beetles can be controlled by several substances. Manurial, cultural, and pruning work was also followed, particularly with respect to lemons more or less affected with scale insects of various kinds, fungus diseases, &c. Manurial experiments with pineapples that showed signs of failing were also successful, and resulted in a fresh development of the root system.

At the vineyard at Coominya, a small first crop of fruit was obtained, and cuttings of phyloxera-resistant stocks of table and wine varieties were distributed. There was a considerable improvement in the respect shown to the requirements of the Fruit Cases Act; but, nevertheless, several prosecutions were necessary. The

principal offences were "topping," or, in other words, placing the best of the fruit for the observation of the buyer with inferior fruit for the remainder of the contents of the case. It was this deceptive kind of trading from which this Act arose, and it is an obnoxious practice to all who are its victims. Another form of offence, and an important one, was the failure to obliterate old brands when second-hand cases are being used. This is a bad custom, because by it an orchard that has a first-class reputation may find that reputation very much endangered if the brands are not obliterated, by the sale of inferior fruit under that brand.

Statistics of the fruit trade imports and exports will be found with the Report of the Director of Fruit Culture.

The Director of Agriculture, in his work for the year, met the same difficulties and obstacles encountered by the farmers, and the continuity of his programme was to a great extent broken for the year. The bad season emphasised, however, a matter that has often been strongly urged by him in relation to the conservation of soil moisture, with regard to crops; and he points out that, where cultivation permitted this to be done, success and not failure was the result, as instanced by a return at the State Farm, Roma, of a crop of wheat of 24 bushels to the acre upon a rainfall of 2 inches during the growing season.

The failure of the canary-seed crop, of which a large area was laid down, and the consequent loss of bird feed, was supplanted by the action of the Department in securing seed of red and white millet, which could be used for a like purpose. Enough seed to plant about 2,000 acres was purchased, and it was quitted to farmers at cost price.

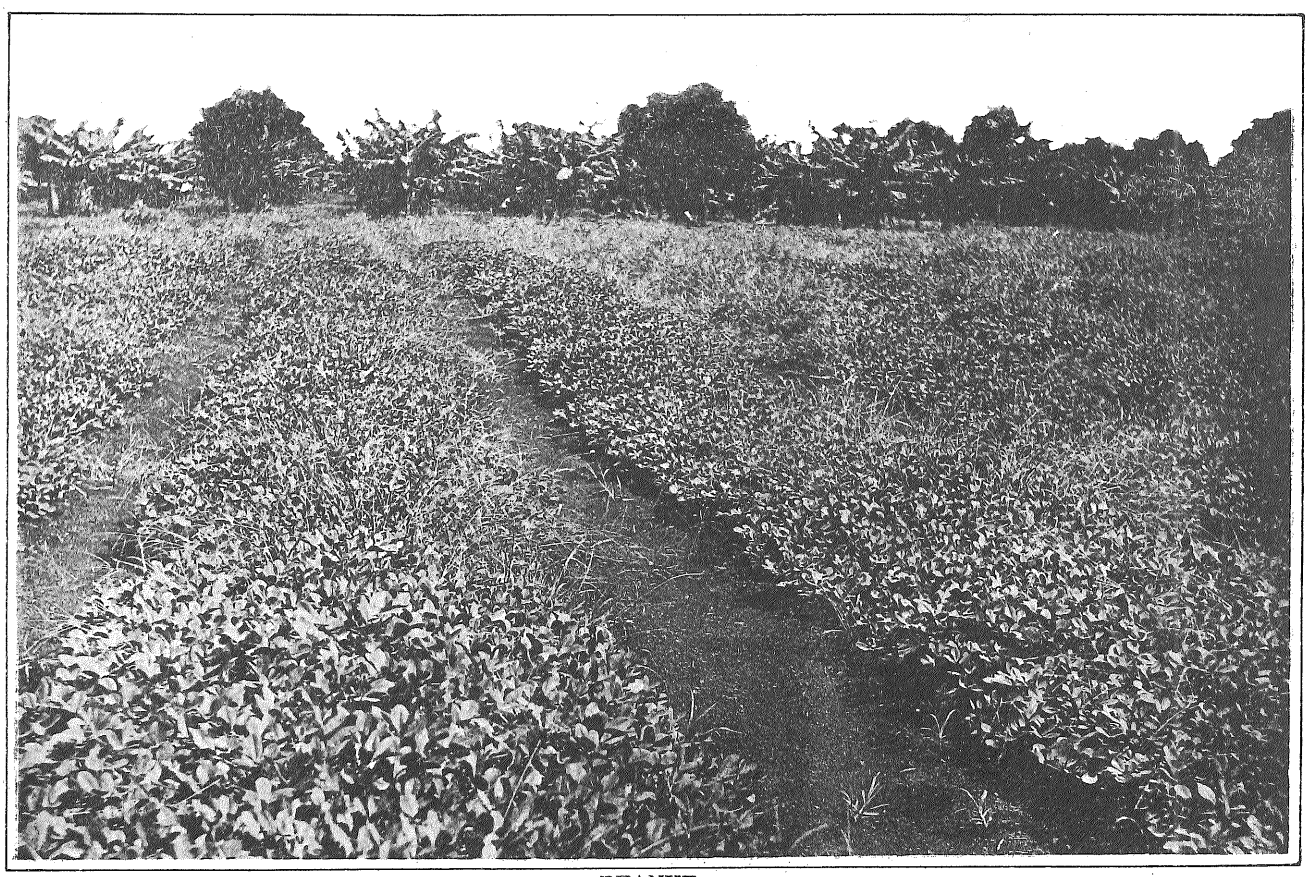
Although generally the maize crop was a failure, there were a few districts where a contrary result was obtained. In the Brisbane and Mary Valley some fair yields may be expected, and on the Atherton tableland the crop promises to equal former years, and an estimate of 25,000 tons has been made of the yield. Lucerne has been especially unfortunate, and most growers have been unable to obtain more than one cutting instead of several, as is usually the custom. The Director of Agriculture has interested himself in two crops which, although grown here spasmodically in former years, have never made much headway:—In the South, to secure a good trial of linseed, a ton of seed was secured and distributed, the crop from which it is proposed shall be sent to the Victorian Flax Mills for treatment to determine the quality and prospects of the Queensland-grown article. In the North, an effort is being made to establish the cultivation of Upland rice for fodder as well as for grain. Growers had a bad season to commence with, and in addition have not had much experience of this crop. In past years a fair area was cultivated in the North, around Port Douglas and Cairns, principally grown by Chinese; and in the South, in the Logan district, with small mills operating to deal with the crop, but, in consequence of the cost in the early days of the State and the competition of the Asiatic countries, the industry gradually died out. In the Central district the tale is not of drought, but of excessive rain and floods, with the consequent result that the land could not be worked in accordance with the seasons. Following this, abnormal frosts caused heavy damage to all crops of a tropical nature, even down to the seashore. Dairying is showing a decided improvement, especially in the Wowan district, where large areas have been successfully laid down to Rhodes grass. The pig-raising industry is also advancing, and, to help it, plots of ten different kinds of crops were initiated, among which a crop of 13 tons to the acre of White Aberdeen turnips may be recorded as having been grown in the Boyne Valley.

In the North, the Department has throughout the year been without the services of an Instructor in Agriculture, and therefore its work has been hampered; but this has now been remedied, and a programme for this financial year has been set out.

Peanuts have been proved to be a good crop in this district, and a return of a ton to the acre has been obtained near Tolga. Dairying is still progressing; and a movement is on foot for the erection of another butter factory, which will bring the number operating on the Tableland to three. Considerable interest is also being shown in a proposed ham and bacon factory, which, if it eventuates, will be a great help to the pig-raising industry.

Excepting maize and dairy produce, there are but few items of production to meet the requirements of the North, and the same may be said of the Central district; but, so far as soil and climate are concerned, the opportunity is present; and it is the object of the Department to induce the production of these other needs, but to do so there will be much uphill work in imparting the necessary knowledge, because so many of those who are classed in the Statistics as "farmers" have followed other vocations in earlier life, and have not the experience and knowledge of those whose families have followed farming for generations.

Fodder conservation was continued during the year, and arrangements were made for 36 fodder plots, which covered 270 acres in all. In some instances the season was so bad that the seed was held over, and in others germination



PEANUT.

1. First Crop on Settler's Clearing, Stanthorpe.

2. Crop on Buderim Mountain.

failed; but, where possible, demonstrations were given, and it can be asserted that this important question is gradually being taken up by farmers. For instance, in the Kingaroy district it is estimated that 30 silage stacks were erected, and reports received indicate the success of them in connection with the milk supply during the winter.

Experiment plot work was maintained by the Director of Agriculture where possible, and there variety of crops were tested under varying conditions. Commercial fertiliser tests and crop variety trials, as well as seed selection and improvement, were carried out. Summarised the plots arranged for were:—

FIELD EXPERIMENT PLOTS, 1918-1919.

Summary.

	SOUTHERN.		CENTRAL.	
	Number of Plots.	Area.	Number of Plots.	Area.
		Acres.		Acres.
(*a*) Seed Propagation—				
Maize	18	95	3	15
Sorghum	12	11½	4	4
Broom Millet	1	3	..	..
Wheat	8	97	..	..
Totals	39	206½	7	19
(*b*) Fertiliser Trials—				
Maize	6	12	..	..
Sorghum	4	4	..	..
Potatoes	2	2	..	..
Lucerne	2	4	..	..
Totals	14	22		
(*c*) Crop Variety Trials—				
Comparative Crop Tests	11	15	10	32
Potato	2	2	3	3
Oats	1	0 1/20	..	..
Wheat	9	1	..	..
Barley	4	0¼	..	..
Onion	2	1	2	0½
Totals	29	19¾		
(*d*) Demonstration Plots—				
Silage	36	269	2	..

The Chief Dairy Expert, in his report, draws attention to the expansion of dairying as indicated by additions to the number of butter and cheese factories operating in this State.

The more general adoption by companies manufacturing butter of the principle of neutralisation and pasteurisation of the cream supply on lines advocated for some years past by Departmental Officers.

He emphasises the necessity for unreserved acceptance of the Babcock test as constituting the only reliable means for determining the butter fat producing capabilities of individual cows comprised within the dairy herds, and advancing the claim that systematic herd testing and careful selection of the heaviest producing cows is inseparable from any legitimate effort towards increased production of dairy produce upon the dairy farms.

The need and value of fodder conservation, and the influence in the direction of setting the dairying industry on a sound foundation, and placing dairying beyond the caprices of alternating "dry spells."

An optimistic view of future prospects of the industry is given owing principally to the depletion of dairy herds in many militant and neutral countries, which in pre-war times were formidable competitors of Australian dairy products in the world's markets.

The Report of the Chief Inspector of Stock —covering, as it does, the record of the campaign against the ticks and the diseases affecting the herds and stock generally—is very comprehensive, and should be carefully read by those interested in such matters. Attention is drawn to the need for greater stringency in the destruction of noxious plants, and incidentally for the need for watering upon stock routes. Both of these matters are within the sphere of the Local Authority, and the absence of help and sympathy from those bodies has long been a disappointment to this Department. The agistment of stock upon roads is affording facilities for the spreading of disease; but, notwithstanding several attempts, the Department has found but few Local Authorities to view the subject in the right light. Convictions were obtained in 113 cases out of 115 prosecutions under the Diseases in Stock Acts, and 35 convictions out of 36 prosecutions under the Slaughtering Acts, in addition to police prosecutions.

The effects of the War again limited the possibilities of the Veterinary Staff; but as regards the inspection of stallions, 110 were examined, of which 12·7 were rejected. Freedom from serious epizootic diseases amongst horses is reported; but mention is made of the diseases that were met with, special mention being made of the Gilbert River "walk-about" disease and the investigation into it. No definite conclusion has been arrived at; but the present opinion is that it is caused by eating some poisonous plant, at present undiscovered. The principal work has been the campaign by the Tick Board, and the effect of that work for the advantage of stockowners. As is stated by the Chief Inspector, much educative work was needed to impress stockowners with the need for actively co-operating, and with them the Local Authorities; but, as mentioned above, the inclination of the latter

to help is not encouraging. Four dips were erected by the Department with the help of the Railway Department, and in addition to one at Donor's Hill, and one in course of erection. These are in addition to Departmental dips that were in existence before the Board commenced operations. There are now 3,623 dips that have been registered in Queensland as being efficient for the dipping of cattle.

Three areas—Warwick, Boulia, and a portion of the Toowoomba Area—were declared clean as a result of the quarantine restrictions imposed. Of the cleansing areas—that is, areas where strict administration of the law is enforced—part of the Helidon Area was declared clean, and the dipping regulations were removed. The remainder of this district, the Kingaroy, the Miles-Chinchilla Area, and the Tallebudgera Area are still under regulations. There were 106 cases of pleuro-pneumonia reported throughout the State during the year; and of 237 animals subjected to the tuberculin test only 8 gave a positive reaction. The Chief Inspector traverses the several diseases in stock that were investigated, and gives details of an investigation into the poisoning of sheep and cattle by the native fuschsia. There were 29 slaughter-yards condemned as being totally unfit, and 51 new yards were erected. The total of animals inspected at slaughter-yards and at bacon factories was:—Bullocks, 44,602; cows, 7,011; calves, 6,267; pigs, 168,106; and sheep, 223,049.

The work of the Stock Experiment Station at Yeerongpilly has covered many subjects; and it is annually creating greater interest among those for whose benefit and advantage it was mainly instituted. It is, in a way, a barometer of the epizootic diseases among stock; and this, in a degree, illustrates the comparative freedom of the State last year from pleuro-pneumonia among cattle. In 1917 there were 54,475 doses of virus distributed; but in 1918 the demand was limited to 6,711. Again the Departmental vaccine for blackleg—a preparation made by the Government Bacteriologist—was in demand to the extent of 35,797 doses, a greater number than the total of the preceding three years. This protective work, initiated by Mr. Pound, has had a great effect in reducing the annual loss of calves.

The need for veterinary surgeons in private practice is made patent by the specimens of diseases that have been brought forward for examination, and emphasises the fact that the time is passing for the old-time opinion that everyone could be his own surgeon. The number of stud cattle received for treatment at the station was 112, the loss being 1 cow in calf, or slightly under 1 per cent. of the whole.

The distribution of lactic cultures, for the preparation of pure starters in cheese factories, has done much to improve the quality of the article manufactured; and the Government Bacteriologist warns managers against the unwise economy of discontinuing the use of these cultures during certain months of the year.

Outside the regular work of the laboratory, specimens of many different articles and things are dealt with for Bacteriological examination; and, though the majority are from the pastoral or dairying industries, many came to hand from factories of different kinds. In this connection there is an interesting summary of investigations in 1892 by Mr. E. Stanley, M.R.C.V.S., and Mr. Pound into the outbreaks of contagious pneumonia among pigs in the Camden and Riverstone districts of New South Wales.

Instruction by lectures and demonstrations to farmers and others was carried on as the work at the Laboratory permitted. The subjects were many, such as tuberculosis in cattle, ticks and tick fever, blackleg, contagious mammitis, strangles in horses, swine fever, &c., &c.

DAIRYING.

Much has been said in public meetings and in print, here and in other States, upon the value of butter in the European market in comparison with 1915, and impliedly that, unless care is taken in the right direction, the trade may fear values somewhat of the former figure. Recent reports from London do not by any means carry any supposition that the prices will recede to any extent for some years to come. They will be higher than in pre-war times, with a gradual decline as conditions return to normal; but when that time will arrive is somewhat problematical. The dairy herds in Europe are depleted, and the still unsettled state of a large portion of the Continent whence Great Britain is accustomed to draw supplies at certain times of the year will place the Siberian supplies out of the question. The Great Britain home supplies will not meet the demand, and the increased cost of wages, material, &c., will be additional factors against any considerable reduction for some years to come. There is, however, a danger to the market for anything but the best butter arising from the expansion of the consumption of margarine; but there does not seem to be any fear of this trade affecting first-class butter, nor will the competitor—the Argentine Republic—that is threatening to enter into competition in the trade.

Cheese, on the other hand, so it is reported, is in the opposite position regarding supply, and there is every indication that there will be a fall from present values. The sources of supply

for Great Britain have not suffered as in the case of butter; and when the accumulated stores of New Zealand begin to come on to the market, the difference in values will be felt. It would be wise, therefore, for the producers in this State to consider the problem that will confront them with regard to this product, and hesitate before giving preference to an expansion of the manufacture of cheese for export before the position is clear.

The number of dairy cows in use for commercial purposes in 1918 was 381,505, a reduction of about 18,000 over that of the preceding year—a reduction no doubt attributable, to a great extent, to the need for turning a great number out to grass owing to being non-productive. The production of butter amounted to 32,371,575 lb. of butter, and 8,636,700 lb. of cheese—a reduction of 6,559,115 lb. and 2,505,414 lb. respectively. Notwithstanding this reduced output, the export oversea in 1917-18—19,595,849 lb., or 8,748·14 tons—exceeded that of 1916-17; but the average export value (1s. 4⅓d. per lb.) was less than that for 1916-17, when it stood at 1s. 5¼d., the highest price during the last five years, the lowest being for the six months to the 30th June, 1914, when the export value was 10¾d. per lb. There were 19,313 dairying establishments or farms, which supplied 45 butter factories and 79 cheese factories in Queensland, and also a fair quantity of milk and cream to New South Wales factories adjacent to the Border.

For reasons that have brought about a decline in the production of butter and cheese, the condensed milk factories did not achieve an increased output; but instead have gone back to the figures of 1916 comparatively. In that year the production was 6,584,272 lb.; and in 1918 the production was 6,845,610 lb.

Of the different districts interested in dairy produce, the Moreton easily holds the first for butter production, but pays little attention to cheese-making. The Wide Bay district, which follows, divides its attention to a greater extent, and is but second in cheese production to the Downs, which was responsible for more than 7,000,000 lb. of the total of over 8,000,000 lb. of cheese made.

POULTRY.

Information from London shows that there is a good market for poultry of the different kinds; and the more so because Russia, the great competitor in London, is entirely out of the market, and it is thought will be unable to regain her pre-war commercial standing for some years to come. The obstacle to this State taking advantage of this opportunity lies principally in the effect of the drought of last year, the high price obtainable here for poultry, and the fact that fully 80 per cent. of the fowls in Queensland are of the Leghorn breed and of breeds of similar size, which are quite unsuitable for export. In this latter fact lies a lesson that breeders should heed; for although high prices are just now ruling they may not always prevail, and if that happens the over-production of the coming years in relation to our own requirements will call for attention to other markets, and for the requirements of those markets. As with fowls, the breed of ducks favoured here does not meet the tastes of the London market which asks for the Aylesbury or Pekin, or their crosses. Fully 95 per cent. of the ducks held in Queensland are of the Muscovy or Indian Runner breeds, which are no good for export; and of turkeys and guinea fowl we have not enough for our own wants, nor are likely to have for some time to come yet; therefore an export trade can be dismissed in respect to them. However, until there is a great expansion in poultry-raising, there is little hope of a regular trade outside our borders, because, taking birds of all ages, the figures of the Government Statistician do not show that we have two head or that we produce five dozen of eggs in a year for each member of the population.

The number of poultry—under which heading are fowls, ducks, geese, turkeys, &c.—decreased in the total by 97,734 head, and the number of eggs produced by 218,176 dozen. These figures at first sight might be disquieting; but the probable reason has arisen from the high prices of meat commodities, and the consequent utilisation of poultry for home consumption.

The total number of all poultry held for commercial purposes is about 926,414 head, and, as this number includes birds of all ages, it can be taken that the State is in possession of about one productive bird for each head of population; and in these figures can be found the reason why we import eggs from the other States, from New Zealand, Straits Settlements, Hong Kong, China, and other foreign countries.

AGRICULTURE.

The area under cultivation last year was 982,066 acres—a decrease of 1·60 per cent. upon the preceding year, but this is to be accounted for by the uncertainty of the season, and it may be said that, after allowing for similar seasons of uncertainty, there has been a steady increase in the area under cultivation during the last ten years; indeed, in three years only—1911, 1917, and 1918—was there a decrease. In 1915 and 1916 the figures exceeded 1,000,000 acres, but this addition can, in a degree, be traced to the effort made at that time to add for war purposes to the production of food stuffs.

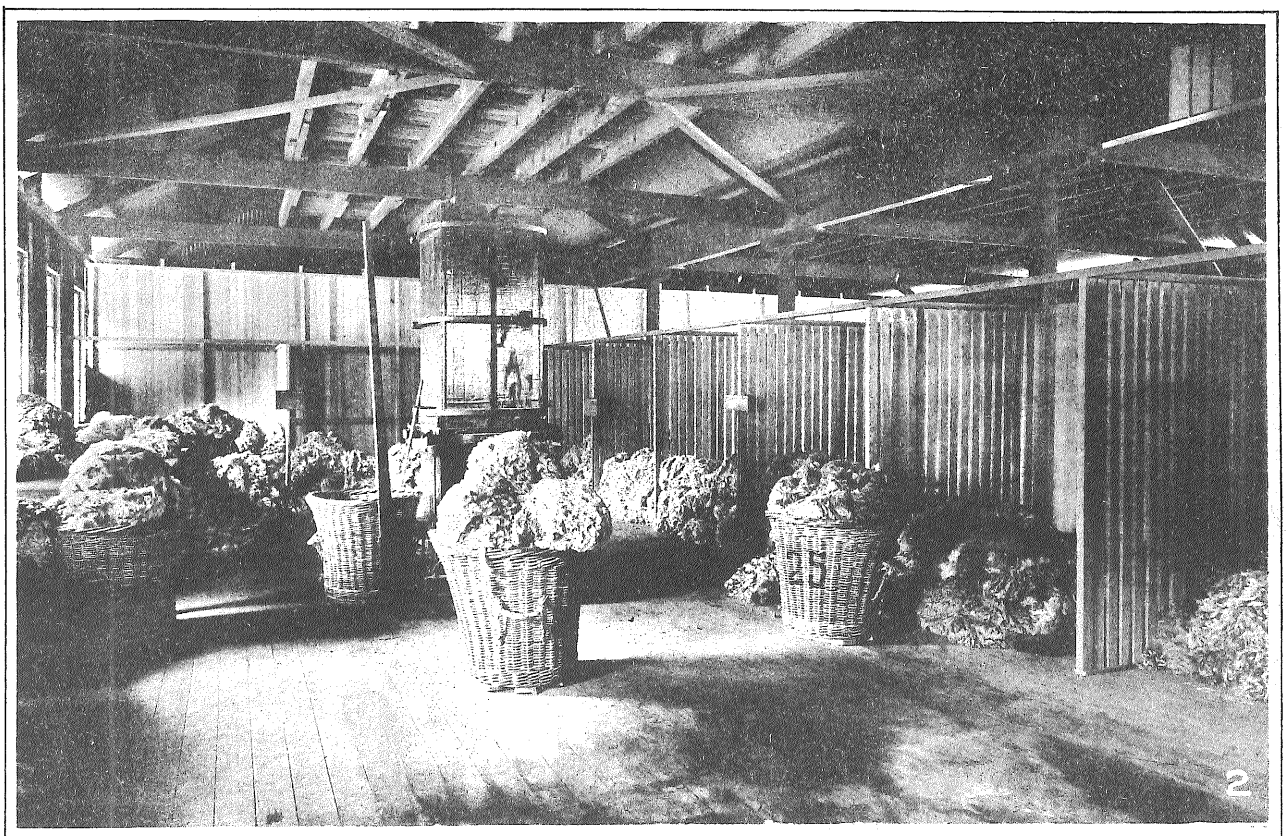
A corollary to the reduction in the area cultivated, and to the cause of it, is the number of people engaged in farming and dairying. During 1918 there were 60,120 people engaged in farming and dairying—a number less by 6,259 people, or roughly one-tenth, than the number engaged in similar occupations in 1917. But against this reduction may be offset the value of machinery and implements employed—viz., £2,300,973, an increase of £66,444 over 1917. It may be that the difficulties of transport and other overhead charges will in some measure account for the difference, but not altogether, because in that respect there was not much difference between 1917 and 1918. Anyway, an indication is afforded of progress rather than retrogression.

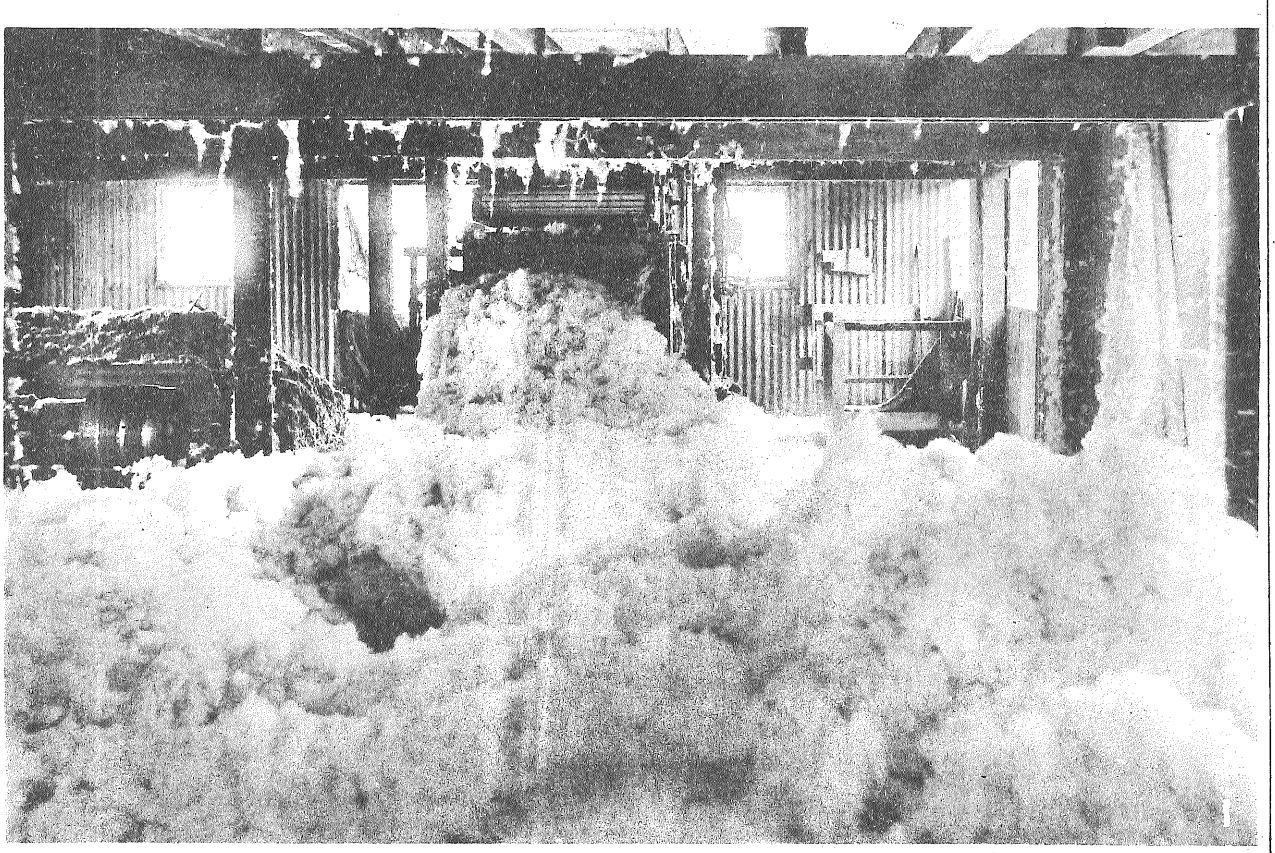
Upon the value of crops—the total of which amounted to £6,011,520—there is but an advantageous difference of £1,979 only; and, taking the season as a whole, it is a matter of wonder that a lesser value was not reached in comparison with the preceding year, but the enhanced market values will account for this. Of our main crops, sugar-cane—the principal crop—went back to the sum of £1,601,295, the value of the crop being £2,733,268 as against £4,334,563 in 1917. Hay and straw receded by £48,000, and root crops by £85,784. All other crops, grain, green forage, fruit, &c., showed advanced values.

There were 22,098 people who cultivated land from a commercial point of view, and of these the greater number, proportionate to the total, cultivated from 5 to 20 acres. The number of these owners was 6,686, and they were responsible for 73,695 acres. Of the other degrees of cultivation 3,001 people were responsible for under 5 acres, 6,242 for 20 acres and under 50 acres, and 6,169 people for 50 acres and over. Excluding the latter category and also a proportion of these people who cultivated from 20 to 50 acres, who, it may be taken as being in the main sugar-growers, it would seem that the area cultivated by each owner is not sufficient for his own requirements in the shape of fodder for home consumption and for production for the market. It is this want of production that has, in a measure, been the cause of the high values for fodder of late and of the dependency which annually occurs at certain times of the year upon other States and countries. The remedy is obvious, and is to be brought about by increased production, to create a reserve stock, and a consequent better hold upon our local market, and upon our needs in dry times instead of depending as we do upon the natural grasses.

The wheat grain crop last year was disastrous in area and in production. The average area under wheat, according to the Government Statistician's returns for the ten years ending 1917, was 118,167 acres; but for 1918 the area under crop for grain was 21,637 acres only, and the average returns was 4·83 bushels only. In 1915 the average reached was 4·42 bushels only, and so far as the seasons are concerned the two years may be compared, as the drought in the wheat-growing areas was about the same. Upon the Downs—the principal area—the productive acreage was only 13,777 acres, a reduction, compared with the preceding year, of 97,546 acres; in the Maranoa there was a 50 per cent. reduction; and in the Wide Bay the area was reduced by four-fifths. The effect of the season upon this crop is plain, and it might be worthy of consideration by those who have greater knowledge of the subject whether, owing to the effect of a dry season upon our black soils, it is wise to continue the cultivation of wheat in soils of that character.

The quantity of wheat treated in the mills was 2,317,098 bushels, for a production of flour, bran, pollard, and meal of the value of £691,063, which represents the value of the requirements of this State in regard to these commodities, there being no export trade. The position of this State with regard to wheat is an illustration of the curious working of the wheat pool. Queensland was refused admission to the pool because it is not a wheat-producing State of the wheat pool standard, yet if an owner wants to buy or sell he cannot do so without the consent of the pool; and, should it be that he has a line of grain which might suit a foreign market, export is prohibited without the consent of the pool, which is extremely hard, if at all possible, to obtain. The same position obtains in the case of exporting to another State connected with the pool. Though the districts of Atherton and Warwick are widely separated, they are the two largest producers of maize, the former exceeding the latter by some 35,000 bushels; but, if Allora be included with Warwick, the position would be reversed. There was not much difference in the total production as compared with 1917, the figures for that year having been 4,188,586 bushels, and for 1918 4,105,974 bushels; but the important gain of nearly 2 per cent. in the





1. Ginning Farmers' Cotton at Department.

2. Classing Farmers' Wool at Department.

average production per acre is noticeable. Taken into consideration with the bad season, it is important, and the cause of it may, perhaps, in a degree, be attributed to the persistent advice given to farmers regarding selection of seed and cultivation. Queensland should be the first of the States for maize production, and there does not seem to be any reason why the average return should not approximate the 40 bushels to the acre that used to be obtained; but instead it is wofully behind Victoria in its average production to the acre, and varies greatly in the districts where it is grown, the highest average having been obtained in the Laidley district with 31·50 bushels to the acre, and the lowest in Rockhampton with 16·34 bushels. Between these there is a wide range of varying figures, the average for the State being 27·46 bushels to the acre.

The fact that cotton is sown in one year and harvested in the next makes statistical records of this crop unreliable in relation to the quantity of lint won; but the season of 1918 was wofully against the success of this crop, as it was of others, and the ginning now concluding will be far less than in 1917, which showed such signs of progress. Moreover, many growers, owing to the shortage of fodder, used this plant for that purpose, and further reduced the harvest. The experience up to the present has proved that it can be pitted in the field of profit with maize to the advantage of the cotton returns; and as a subsidiary crop on the farm it should receive the interest of the grower, and particularly so in the grain-growing districts where an annual profitable grain crop is unknown. The alteration in the world's markets and the shortage of supplies point to a steady value for lint for some time, moreover, the tendency on the American side to keep and manufacture its products within its borders, coupled with the fact that the production there of cotton on the farm is rather decreasing in volume, has required the British manufacturers to turn elsewhere, and endeavour to arrange for British-grown supplies. The proposal that has been made public to spend large sums of money in establishing cotton-growing in Upper Egypt is not an indication that supplies will be plentiful, and consequently that of any fear that prices will fall.

The Department has a great faith in cotton-growing as a remunerative crop, and is prepared to find seed free of charge, to gin the cotton on owner's account, and sell it, afterwards returning the proceeds to the farmer less actual charges, no commission being charged. Moreover, an advance of 2d. per lb. is made directly the cotton in the seed is received in the Departmental store.

A movement is on foot by the Board of Trade of the Commonwealth towards making Australia self-supporting with regard to tobacco, and for this purpose a proposal has been made to appoint instructors at the expense of the State. That tobacco will grow well here and that it is a profitable crop is well known; but, notwithstanding the encouragement given in past years by the different Governments and by the manufacturing companies, the establishment of the industry has not been a success. The area fluctuates; at present it stands at 213 acres in 1918 as against 289 acres in 1917, with a better crop for 1918, notwithstanding the decrease of 76 acres; but the main reason for the stagnation is that the European will not continue steadily at the industry, which is here and in the other States mainly in the hands of the Chinese. The cause is to be found in the close attention required to bring the crop to a profitable harvest. This the European does not seem inclined to give, preferring probably the larger crops that are more easily handled; and, until population is greater and competition keener, it is feared that this crop will remain in the balance.

The history of irrigation, as told by the statistics of the Government Statistician, is very disappointing in a country where it is so much needed. Whatever may be the reason, the fact remains that instead of progress there is retrogression, and we still trust to the rainfall when it comes. In 1913 there were 11,904 acres under irrigation, but with a steady annual fall the figures for 1918 were but 6,947 acres; and of that number 4,078 acres were in the Ayr district, 442 acres in the Bowen area, and Cunnamulla 399 acres. Excluding these three districts where the irrigation for commercial purposes is on a greater or less scale, the remainder can be classed as garden irrigation—that is, for market gardens around towns or for private establishments.

CORN COMPETITION.

Owing to the extreme dryness of the past season, the competition has resulted in a disappointment to many of the competitors.

Out of 117 entries only 22 competed as a result of the indifferent season.

Tabled herewith are records of entries and adjudication made thereon:—

Number of District.	Supervised by—	Number of Entries.	Number Adjudicated.
1	E. W. Ladewig, Beenleigh ..	8	
	L. J. Kelly, Harrisville ..	5 } 17	7
	A. K. Henderson, Rosewood ..	2	
2	C. C. Pickering, West End, Brisbane	1	
	R. G. Ridgway, Taringa ..	5	
	L. Verney, Caboolture	10 } 20	3
	J. A. Midgley, Bundaberg ..	4	
3	J. H. Barber, Crow's Nest ..	13	
	J. J. Crew, Gatton	2 } 15	Nil
4	S. K. Crowther, Kingaroy ..	13	4
5	J. D. Ogilvie, Clifton	4	
	S. Clayton, Toowoomba ..	14 } 25	2
	J. R. D. Munro, Warwick ..	7	
6	D. Downs, Gayndah	8	2
7	J. Cattanach, Dalby	15	
	R. S. Sigley, Roma	1 } 16	2
8	L. Moriarty, Rockhampton ..	1	1
9	J. P. Carey, Yungaburra ..	2	1
		117	22

Generally speaking, the maize showed uniformity in character and general improvement in the type selected. In one or two instances, however, the cobs selected leave much to be desired. Room for improvement exists in the keeping of records of plots, only one record in the whole of this year's competition being worthy of high marks. Where two brothers are competitors the records of each are invariably identical in word, spelling, and errors, clearly showing that initiative is lacking.

Though the season has been far from favourable, the high average yield of grain per acre has been maintained throughout, this being attributed to improved methods of cultivation and the high quality of seed used.

The highest yield was reached in the Eumundi district, 127·4 bushels per acre being recorded; whilst the average yield throughout reached 69 bushels per acre.

In comparison with the average yield for the State, the consistent increase as shown in the average yield of the plots is remarkable. It is apparent this is on the up-grade, and now stands at thrice that of this State's average yield.

The following data is worthy of note:—

1914-15 the average yield from plots was 39·3. State's average, 24·16.
1915-16 the average yield from plots was 51·3. State's average, 13·68.
1916-17 the average yield from plots was 62·3. State's average, 16·64.
1917-18 the average yield from plots was 85·3. State's average, 26·37.
1918-19 the average yield from plots was 69·0. State's average, incomplete.

The following are tabled results of actual yields of plots, 1918-19:—

Return per Acre.	No. of Plots.
10-20 bushels	3
20-40 bushels	Nil
40-60 bushels	7
60-80 bushels	4
80-100 bushels	4
100-120 bushels	3
120-140 bushels	1

The accompanying graph shows at a glance the progress made as regards yield compared with previous juvenile corn-growing competitions covering a period from 1914-18:—

CORN-GROWING COMPETITION—1918-1919.

Name and Address of Competitor.	Age in Years.	Yield per Acre in Bushels.	Quality of Maize produced. Maximum Points, 15.	Yield of Plot. Maximum Points, 75.	Records of Plots. Maximum Points, 10.	Total Maximum Points, 100.	District Prize.
No. 1 District.							
1. A. G. Marks, Alberton ..	17	106·7	10·7	57·9	6·0	74·6	1st District and 3rd Special
2. R. Swallow, Boonah ..	15	98·3	13·7	53·4	5·0	72·1	2nd District
3. A. H. Swallow, Boonah ..	14	92·7	13·5	50·3	4·5	68·3	3rd District
4. Miss E. Marks, Alberton ..	14	87·0	10·5	47·2	6·0	63·7	
5. A. V. Rachow, Alberton ..	17	48·0	9·2	26·0	6·0	41·2	
6. A. W. Miers, Pimpama ..	17	14·0	8·1	7·6	9·0	24·7	
7. P. J. Schlecht, Rosewood ..	17	13·1	5·2	7·1	4·5	16·8	
Total number of competitors—18.							
No. 2 District.							
1. A. H. Sims, Eumundi ..	12	127·4	12·0	69·2	7·5	88·7	1st District and Special
2. E. A. Sims, Eumundi ..	14	111·5	13·5	60·6	6·5	80·6	2nd District and 2nd Special
3. R. H. Pickering, Eumundi	15	78·4	9·3	42·6	4·5	56·4	3rd District
Total number of competitors—19.							
No. 4 District.							
1. N. A. Campbell, Murgon ..	14	52·0	11·1	28·2	6·0	45·3	1st District
2. P. W. Dossel, Memerambi ..	15	55·6	8·4	30·2	5·0	43·6	2nd District
3. N. J. Dossel, Memerambi ..	12	42·5	8·2	23·1	5·0	36·3	3rd District
4. E. Dossel, Memerambi ..	10	41·0	8·4	22·2	5·0	35·6	
Total number of competitors—13.							

N.B.—*No. 3 District.*—14 competitors, none of whom completed.

CORN-GROWING COMPETITION—1918-1919—*continued.*

Name and Address of Competitor.	Age in Years.	Yield per Acre in Bushels.	Quality of Maize produced. Maximum Points, 15.	Yield of Plot. Maximum Points, 75.	Records of Plots. Maximum Points, 10.	Total Maximum Points, 100.	District Prize.
			No. 5 District.				
1. T. C. Williams, Crow's Nest	17	73·5	12·6	39·9	7·0	59·5	1st District
2. W. Siebenhausen, Allora ..	12	79·0	11·2	42·9	4·5	58·6	2nd District
Total number of competitors—25							
			No. 6 District.				
1. L. Meredith, Gurgeena ..	17	52·7	9·9	28·6	2·0	40·5	1st District
2. Miss W. Meredith, Gurgeena	14	19·0	8·4	10·3	2·5	21·2	2nd District
Total number of competitors—8.							
			No. 7 District.				
1. D. H. Vohland, Quinalow..	14	94·7	11·4	51·4	4·0	66·8	1st District
2. W. York, Wallumbilla ..	15	78·9	9·3	42·8	4·5	56·6	2nd District
Total number of competitors—16.							
			No. 8 District.				
1. Miss M. Wilson, Yeppoon ..	17	56·5	9·0	30·7	5·5	45·7	1st District
Total number of competitors—1.							
			No. 9 District.				
1. L. A. Farier, Kairi ..	17	106·2	11·7	37·7	2·5	51·9	1st District
Total number of competitors—2.							

The cultivation of coffee has had a chequered existence in this State, and, notwithstanding the excellence of the product, the industry instead of advancing is steadily declining. The tendency in the tropical part of the State to pay attention to nothing but the cultivation of sugar-cane, and the difficulty in obtaining labour for picking at prices that would enable the profitable cultivation of coffee, are undoubted obstacles; but the fact remains that critics and connoisseurs upon the London market have spoken very highly of Queensland-grown coffee. A letter recently received from London, describing a meeting at the Royal Colonial Institute upon coffee, mentions the opinion of Mr. Farrar, a high authority upon choice coffee, who was present, as expressed in the following words:—"He tells me his ambition is to have at one time five bags in one lot of that choice Queensland coffee he lectured upon (a sample sent home to the Agent-General for exhibition purposes), and with that quantity he would so place it that the coffee-broking world would be agog with it."

Such testimony needs no comment, and should have a great effect upon the industry, not perhaps in the direction of the establishment of large estates, which would at harvesting time employ a considerable number of people for the picking, but rather in encouraging the cultivation of a few trees on farms as a means of subsidiary profit.

TOBACCO.

The fall in the area under tobacco mentioned last year in comparison with 1916 has been further added to by a decrease of 76 acres in 1918, the total area under this crop being 213 acres only, of which 172 acres are in the Inglewood and Texas districts, but in the latter the area was less by 61 acres than in 1917. The Bowen district, where the cigar leaf is grown, which was responsible in 1917 for 34 acres, could account for 12 acres only in 1918. Whatever may have been the cause of this serious fall in the tobacco industry, it is undoubted that good tobacco can be grown here, and, although Europeans have been attracted to it, the cultivation on the whole has been in the hands of the Chinese. Everyone admits that the cultivation of tobacco is profitable to the grower, but apparently the time has not yet come when the European population will take a liking for the cultivation of it. The same may be said of the industry in New South Wales, the principal followers of it being Chinese.

The manufacturing companies have well seconded the efforts of the Government in past years to establish the industry, and some of them must have lost heavily in the enterprise; and an opinion has been expressed that the Australian leaf market is in a worse position just now than it has been for many years. There is no want of a good market for good leaf, and prices have been offered by the manufacturing firms (Messrs. W. D. and H. O. Wills, Ltd., and the British Australasian Tobacco Company) at from 6d. per lb. to 2s. 6d. per lb. for the different qualities; and their annual quantity of leaf required is mentioned at 2,000,000 lb. of cured leaf.

In 1913 the area under crop was 731 acres, and now the acreage amounts to 213 acres. It may be that the removal of the bonus of 2d. per

lb. may have had some effect upon the fall, but it could not to any great extent, because no bonus was given upon the cultivation of pipe tobacco, which forms the bulk of production. If a bonus is again established by the Commonwealth, pipe tobacco should certainly be included.

SUGAR.

As stated in last year's Report, the conditions for the growth of sugar during 1918 were abnormally unfavourable. The severe cyclonic blow experienced at Mackay, Babinda, and Innisfail not only caused immense damage to the cane crops in those centres, but the neighbouring cane areas were also to some extent affected. Floods and frosts also added to the generally unfavourable nature of the season; and in every district it was ultimately found that the cane had cut out much lighter than was anticipated. Even in those areas that escaped the disturbances mentioned above, the early setting in of cold weather retarded the progress of the cane and caused a decrease in the yield. The last six months of the year were exceedingly dry, and this has had a prejudicial effect on the present season's crop, which, it is anticipated, will even fall below that of 1918.

The yield for 1918 only amounted to 189,978 tons of sugar, or 117,736 tons less than were manufactured in the preceding record year of 1917. This yield fell very far short of Australia's consumption, but the surplus from 1917 helped to make up the deficiency.

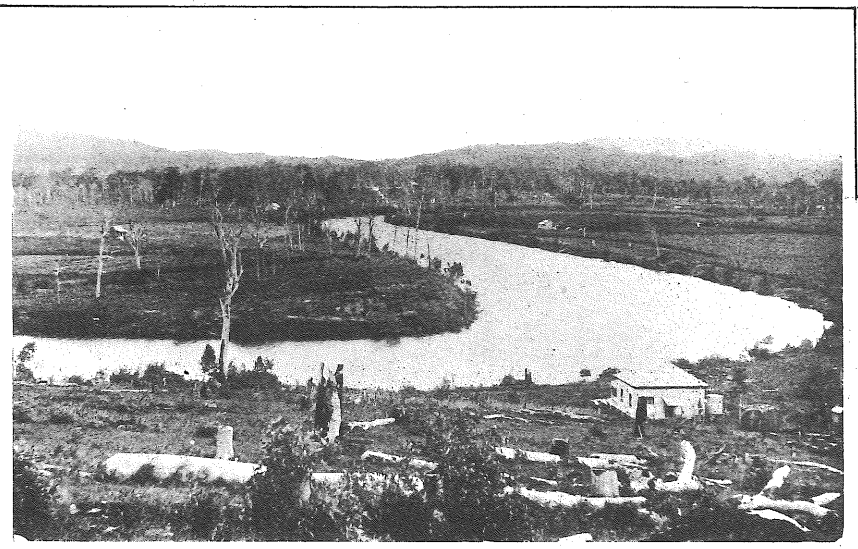
The total acreage under cane in 1918 was estimated by the Government Statistician to be 160,534 acres—a decrease of 15,228 acres. Of this area cane from 111,572 acres was crushed, leaving a balance of 48,962 acres, which included standover cane, cane cut for plants, and cane planted for 1919. The yield of cane per acre was only 15·01 tons, the previous year (1917) giving a yield of 24·88 tons. The tonnage of sugar per acre has increased, due to the growth in 1917. A figure of much interest is the tons of cane taken to make 1 ton of sugar. This in 1918 amounted to 8·82—a trifle more than in the previous year, which showed 8·79. Taken over a period of ten years, however, the tonnage of cane required to make a ton of sugar is less than what it was; while the yield of cane and sugar per acre has increased, due to the growth of better varieties of cane and improved methods of cultivation. While the growth of cane still leaves a good deal to be desired, it is gratifying to find that a considerable improvement has taken place in the past decade. Only for the war this would doubtless have been much better, but the high cost of implements and fertilisers has greatly militated against the farmer.

The price of sugar has remained at £21 per ton for raws. This price will continue till the end of this season by agreement between the Commonwealth and State Governments.

The outlook for the present season, owing to the drought at the end of 1918, which continued for the first few months of the present year, is not too promising as far as the total yield of sugar is concerned. The districts of Bundaberg and Childers are particularly backward, and a very small crop will be harvested there this year. The rains set in too late to benefit the crop, but will have a good effect on that for 1920. In the North, where the summer heat is retained longer, the late rains greatly stimulated the present crop, and materially increased the estimated yield in nearly all the Northern sugar districts.

The Lower Burdekin district, however, is a good deal behind this season owing to the drought. Altogether, it is considered that the 1919 crop will be considerably less than that of last year, the present approximate estimate being 160,000 tons of sugar. The indications, however, point to a large crop for the 1920 season, and, given favourable weather, this should be realised. There is almost certain to be a very large crop of standover cane in the Southern areas, and a great amount of planting has also been done—both North and South. It is unfortunate that climatic factors should have so large an effect in varying the Queensland crops of sugar-cane, due largely to the tremendous length of coast line covered by the industry. Droughts are practically unknown in North Queensland above Townsville, and fair to good crops can always be relied on in the absence of cyclones, which are few and far between. But the Southern districts below Rockhampton are frequently subject to droughty periods which affect the total yield of cane. The rich red soils of Woongarra and Childers, if they were irrigated, would produce much larger crops than they do at present, and would largely reduce the yearly variations in the Queensland sugar crops, and reduce the need for importations. The price of sugar in Java is now very high, and Australia will probably be obliged to pay considerably more for imported sugars for some time to come. During the war period the people of Australia have had cheaper sugar than any other country, due almost entirely to the Australian production.

The Sugar Experiment Stations—a branch of this Department—have been engaged during the past year in demonstrating improved methods of cultivation, liming, and fertilising at Bundaberg and Mackay. New varieties of cane have been and are still being introduced. Free distribution of tested commercial varieties of cane are yearly made to canegrowers.



SUGAR.

1. Sugar-cane.

2. View of Sugar Land, Maroochy River.

3. View of Sugar Land from Maroochy River.

4. Sugar-cane.

The buildings upon the new Sugar Experiment Station at South Johnstone, near Innisfail, have now been completed, and field work has been commenced. It is hoped that the planting of a number of varieties will be made in August. This station will be the Northern one for the State and completes the chain, there being a Southern and a Central station already established.

Experiments with siloing cane tops for cattle-feeding have been carried out at the Bundaberg Station with marked success. These tops are generally wasted, but they silo well and prove a palatable feed for stock.

An introduced cane from India, known as Shahjahanpur No. 10, has proved itself as a frost-resisting variety, and has been largely applied for through all the Southern sugar districts.

At Meringa, near Cairns, the Entomological Division of the Sugar Experiment Stations has been carrying out research and practical field work in connection with the grub pest under Dr. J. F. Illingworth, who is assisted by Mr. Edmund Jarvis. In addition to the grub investigations, the Entomologist has bred the parasite of the cane borer beetle in the shape of the Tachinid fly, and liberated these in many of the Northern canefields with good results. Work in connection with the grubs has proceeded largely upon practical field lines.

Full reports upon the work of the Sugar Experiment Stations in all its branches will appear in the Annual Report of the Bureau later in the year.

MEAT.

There was a reduction in value, amounting to £1,164,803, in the output during 1918 of live stock slaughtered for preservation as food, or freezing, or for tallow, and of the by-products therefrom; and to win this return there were 21 establishments in operation, employing 5,079 people, as against 5,100 people in 1917. The year of 1917 gave the output of the greatest value during the last five years, and 1918 compares with 1914, when the value of the output was £7,147,493. The figures for the preceding ten years were:—

	£		£
1918 ..	7,322,882	1913 ..	5,287,608
1917 ..	8,487,685	1912 ..	3,743,178
1916 ..	6,298,655	1911 ..	1,968,314
1915 ..	6,634,762	1910 ..	2,659,861
1914 ..	7,147,493	1909 ..	1,821,112

A study of these figures will be interesting in the direction of a comparison of the export meat trade for the five-year War period and the preceding five years, and perhaps may form some sort of basis for estimating the coming trade under normal conditions.

The consumption for each head of pouplation in this State now stands at 161·21 lb. for the year, and is a considerable reduction from the total for 1911, when it reached 278·89 lb. for each individual for the year. Since 1911 there has been a steady decline in the annual consumption, but it still remains higher than probably any other country.

STOCK.

It was only with Swine that any decrease in our Stock is shown by the Government Statistician, and of them the falling off was equal to 18·37 per cent. Possibly the cause may be in a measure attributed to the dryness of the season, and the consequent inability of dairy farmers to spare any by-products that could be used for rearing calves. The number of pigs as at the 1st January last was 140,966, a number inadequate for the requirements of the bacon factories, which have to go beyond the border of the State for their raw material. Indeed, the number of pigs in Australia is not enough to meet the demand, and at present values pig raising is a profitable undertaking; but to add to their number to any great extent some other form of pig farming than the custom now fashionable of regarding it as an adjunct of the dairy would have to be undertaken.

Of other stock there were, last year, 759,726 horses, 5,786,744 head of cattle, and 18,220,985 sheep, the percentage increases being 3·64 per cent., 8·84 per cent., and 5·91 per cent. respectively. The number of entire horses, 7,664, is slightly less than in 1917, but on the figures as they now stand, there would seem to be quite enough evidence to warrant the control of the use of stallions by legislation, a step which this Department has long advocated as a necessity towards stopping the deterioration in our horse stock that is undoubtedly increasing year by year. Legislation in this direction would at least ensure the use of stallions of good breeding and true to type, but with no law, any kind of animal can be used, and this is done in many places, with the result that owners of really good horses cannot compete with the low-priced grade animals that stand for public use during the season.

There were 42,735 owners of cattle, with an average herd for each of 135 head, but few of those owning up to 100 head; the average was slightly under 27 head, and this class may be taken to represent the majority of farmers and dairymen. Under the three divisions of the State, the greater number of horses and cattle were held in the Southern division as compared with the Central and Northern; but in sheep the Central division takes the lead. In the State as a whole the average number of sheep in a flock was 4,521, with 4,030 owners. There were 1,966 owners with flocks numbering up to 500 head, and these had

on an average about 100 head each—figures that are interesting, because they may be taken to indicate sheep held on small holdings where sheep raising is not the main source of livelihood. The Department is a strong advocate of the carrying of sheep on farms upon the coast and on the immediate high lands in conjunction with the operations of general agriculture, and it may be taken that the flocks averaging 100 head represent to a degree the result of the advice given by the officers of the Department.

The number of sheep killed during the last year for human consumption, export and for home consumption, was much less than in 1917, the figures for the two years being respectively 1,093,694 in the latter year, and 812,994 in 1918; but in the traffic overland, that is to the Southern States, the exports were more than double that of 1917, and as a considerable number were afterwards killed, it may be accepted that on the whole the number used in the two years was about the same. The number exported overland was 476,255.

The education initiated by the Department advocating the keeping of sheep by farmers in the coastal area has been continued, and is having effect. It is five years since the initiation, and now many farmers have taken up the business in a small way; but by experience knowledge will be gained, and the numbers will be added to. So far as is known there have been but few failures, and as an illustration of what has been done it may be mentioned that in the Beaudesert district there are now sixty farmers who keep flocks of sheep.

The war has no doubt been a hindrance in expansion because of the difficulty in obtaining netting for dog-proof fencing; this difficulty will, however, it is hoped, be soon overcome.

The Instructor in sheep and wool has met with a great deal of sickness among sheep during last year, especially upon the Downs, the trouble being mainly due to worms. Another trouble which he draws attention to is the serious one of the nasal fly, that was introduced into Queensland in 1906 through the medium of two shipments of rams from New Zealand. It was first observed upon the Downs, and has now spread South and West to Mungindi and Cunnamulla. It is also in the Springsure district, and probably in other parts of the Central district.

The districts that carry more than a million sheep are: Longreach with 1,518,671, Muttaburra with 1,421,373, Winton with 1,392,164, Blackall with 1,200,121, and Richmond with 1,192,003 head. In 1913 the district of Mitchell held the pride of place; but now it is far down the list.

Instruction has been given in different districts on woolclassing and the preparation of wool in the grease for market, and the scheme for classifying farmers' wool and selling it on their account has been continued with advantage to those who have availed themselves of it. The number of farmers taking advantage of the scheme has been somewhat curtailed by the war appraisement system, under which high prices were obtainable for both large and small lots. With a return to the auction system, however, the change will affect the small holder, and then the advantage of taking advantage of the offer of the Department will become apparent. The wool handled amounted to 149 bales, and the highest price realised was 21¼d. a pound for greasy wool. The brokers' reports on the work carried out, such as classing, grading, packing and general get up of the wool were very satisfactory.

The average price obtained from the Appraisement Committee for greasy wool for export was 17¼d. a pound, and for scoured wool 27d. a pound. The value of the greasy wool exported was £2,529,684, and for scoured wool £1,011,748; in both cases the value of the exports being much less than in 1917, the reduction in the case of greasy wool amounting to £253,099, and of scoured to £1,007,312. The figures entirely relate to exports oversea from Queensland, and do not include wool sent from this State to another State and then exported, for the reason that under the Customs system no record is kept of interstate movements.

While the War was active, it was not possible to include the returns of the exports of our principal products, as customary during many years, but now, the embargo against the publication of information having been raised, the following table, showing the oversea export trade for six months ending 30th June, 1919, which has been supplied by the Customs Department, may be of interest:—

Items.	Value.
	£
Arrowroot	81
Butter	501,334
Cheese	22,432
Coffee	—
Bacon and Hams	26,835
Meats—	
Beef	766,224
Mutton	13,624
Lamb	—
Other	94,142
In tins	252,297
Milk, Preserved, Milk, Concentrated	8,778
Hides	84,823
Skins	40,411
Tallow	432,312
Wool, greasy	1,911,994
Wool, clean	2,325,914
Total Value	£6,481,201

COMPARATIVE PRICES OF CERTAIN PRODUCE FOR PERIODS FROM 1ST JULY, 1918, TO 30TH JUNE, 1919.

—	Lowest.	Highest.	Average Lowest.	Average Highest.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Bacon, per lb.	0 0 9	0 0 10	0 0 9¾	0 0 11¾
Barley, per bushel	0 2 6	0 6 0	0 4 6¼	0 4 10
Bran, per ton	4 0 0	9 0 0	6 11 3	7 0 10
Broom millet, per ton	30 0 0	90 0 0	57 9 8	71 8 0
Butter, per cwt.	6 8 6	9 6 8	8 7 0¾	8 7 0¾
Chaff (mixed), per ton	3 10 0	14 10 0	8 8 2	10 2 6
Chaff (oaten), per ton	4 15 0	15 3 0	5 19 9	10 2 6
Chaff (lucerne), per ton	3 0 0	17 6 8	9 13 2	13 8 4
Chaff (wheaten), per ton	4 10 0	12 5 0	7 2 0	7 15 5
Cheese, per lb.	0 0 7½	0 1 4½	0 0 10⅜	0 1 0¾
Flour, per ton	12 0 0	14 0 0	12 3 4	12 3 4
Ham, per lb.	0 1 3	0 2 0	0 1 4¾	0 1 8¾
Hay (oaten), per ton	8 5 0	9 15 0	9 1 8	9 15 0
Hay (lucerne), per ton	3 0 0	14 0 0	7 4 2	10 2 1
Hay (Wheaten), per ton	4 10 0	9 5 0	5 19 0	6 12 0
Honey, per lb.	0 0 2	0 0 6	0 0 3¼	0 0 4¾
Maize, per bushel	0 5 0	0 10 3	0 6 6½	0 7 3
Oats, per bushel	0 3 0	0 5 6	0 4 1	0 4 5½
Onions, per ton	12 10 0	39 0 0	20 1 4	22 5 5
Peanuts, per lb.	0 0 4	0 1 0	0 0 5½	0 0 7½
Pollard, per ton	5 5 0	9 5 0	6 10 5	7 3 4
Potatoes, per ton	5 0 0	34 0 0	14 2 3	18 17 6
Potatoes (sweet), per cwt.	0 2 9	0 12 6	0 5 10½	0 6 9
Pumpkins, per ton	1 12 0	24 0 0	10 3 6	12 6 3
Wheat, per bushel	0 4 3	0 5 9	0 4 11	0 5 2
Sisal hemp, per ton	No quotations.	..	..	
Bananas, per dozen	0 0 1¾	0 0 8½	0 0 2½	0 0 6¾
Bullocks, per head	17 10 0	33 15 0	22 12 9	26 4 5
Cows, per head	12 5 6	21 0 0	15 9 7	19 1 4
Sheep—				
Merino wethers, per head	1 17 0	2 9 0	2 3 10	2 3 10
Merino ewes, per head	1 8 9	2 3 6	1 13 11	1 14 8
Lambs, per head	1 9 9	1 19 3	1 13 2¾	1 13 2¾

DINGO AND MARSUPIAL DESTRUCTION.

The following is a table of operations in respect of dingo and marsupial destruction since legislation was first introduced on the subject in 1877 until 31st December, 1918:—

PARTICULARS OF DESTRUCTION.

Year.	Kangaroos and Wallaroos.	Wallabies.	Bandicoots, Paddamelons, and Kangaroo Rats.	Dingoes (including Foxes).	Total.	Bonus Paid.	Government Endowment.
						£ s. d.	£ s. d.
1877-1878-1879	1,171,427	595,531	..	..	1,766,958	31,056 0 5	21,967 15 8
1880-1881	..	No Returns.					
1882	424,651	551,276	..	..	975,927	19,272 2 0	4,429 4 5
1883	361,450	684,554	..	..	1,046,004	24,550 4 6	18,322 14 9
1884	380,625	570,290	..	..	950,915	24,140 4 9	12,912 2 8
1885	312,139	486,913	2,113	74	801,239	21,846 12 10	11,088 8 2
1886	284,897	449,656	13,207	9,833	757,593	*20,500 0 0	11,143 18 3
1887	175,363	316,946	8,925	11,525	512,759	17,542 18 4	12,844 14 0
1888	275,729	445,080	24,377	19,552	764,738	27,235 11 2	13,193 4 0
1889	312,476	353,994	27,424	19,570	713,464	26,741 1 11	14,617 9 10
1890 to 1 Feb., 1891	259,208	375,269	38,776	14,220	687,473	21,596 4 3	17,697 2 0 7,231 13 3
1891-1892	..	No Act	in force.				
1893-1894-1895	..	No Returns	furnished.				
1896	288,658	522,653	24,449	16,782	852,542	Estimated at 106,450 0 0	16,959 4 1
1897	717,717	601,307	177,811	26,000	1,522,835		
1 Jan. to 30 June, 1898	290,163	298,078	6,505	11,090	605,836		
1898-1899	823,700	851,022	36,138	24,447	1,735,307	44,392 0 8	13,030 8 9
1899-1900	634,223	620,109	29,912	20,331	1,304,575	35,318 16 10	15,155 10 6
1900-1901	413,992	816,300	40,517	24,939	1,295,748	33,118 13 0	15,329 12 2
1901-1902	281,445	751,061	30,684	21,289	1,084,479	29,613 13 7	11,163 1 7
1902-1903	282,770	636,856	48,768	18,148	986,542	22,922 0 10	11,775 15 8
1903-1904	53,301	190,353	9,279	12,477	265,410	9,901 6 2	5,819 8 0
1904-1905	81,892	208,631	36,164	10,176	336,863	11,272 16 2	4,176 15 8
1905-1906	109,349	339,815	84,887	19,420	553,471	13,964 19 1	4,699 18 9
1906-1907	..	398,284	81,746	9,758	489,788	11,990 11 5	3,146 5 1
1907-1908	..	474,387	127,618	11,493	613,498	13,259 14 8	5,515 4 2
1908-1909	..	509,006	105,110	13,897	628,013	16,063 15 4	5,399 3 6
1 July, 1909, to 31 Dec., 1910	..	1,198,059	103,534	23,828	1,325,421	31,419 17 6	5,260 7 9
1911	..	708,501	40,055	21,508	770,064	18,657 13 9	5,887 10 11
1912	..	912,795	43,267	23,743	979,805	25,340 8 7	6,271 16 9
1913	..	787,558	18,627	18,757	824,942	19,535 13 2	6,541 8 3
1914	..	433,325	9,044	21,061	463,430	15,365 4 6	3,467 19 8
1915	..	319,437	14,048	25,924	359,409	17,596 1 9	4,063 7 0
1916	..	202,612	5,330	26,525	234,467	17,143 3 8	3,596 5 6
1917	..	220,721	4,197	18,916	243,834	14,472 11 10	3,223 19 3
1918	..	211,306	5,287	22,206	238,799	17,264 19 10	3,450 18 6
	7,935,175	17,041,625	1,197,799	517,489	26,692,148	£759,845 14 6	£299,382 8 6

REPORT OF THE PRINCIPAL OF THE QUEENSLAND AGRICULTURAL COLLEGE.

SIR,—I have the honour to submit to you the Annual Report of the Queensland Agricultural College for the year 1918-19.

In reviewing the past twelve months, the one outstanding feature is the drought. Detailed consideration of this is important because the College is typical of the Lockyer Valley—in fact, of a large portion of South-Eastern Queensland. Hence what the College has suffered is an indication of what a large portion of Queensland has suffered; and if the College lost heavily on the year's operations, so also has a big section of our rural community.

In order to fully appreciate any drought, it is necessary to consider the rainfall of the immediately preceding years, for the residual moisture which may or may not be left in the subsoil has a marked effect on the value of any rain that may fall during the drought period. Further, for the sake of comparison and so as to indicate the special characteristics of the 1918 drought, a diagram showing the rainfall covering the 1902 drought has been prepared. Thus, Diagram 1 shows the rainfall at the College for each month from April, 1900, to July, 1903; and Diagram 2 shows the monthly records from April, 1916, to July, 1919. In each diagram the monthly averages of 20 years' records is shown by the full curved line. April to April has been taken as a season. Such a division of the year starts with the winter planting, and finishes with the end of the summer growth.

GRAPHS.

Examining Diagram 1, it will be seen that the 1900 season was, if anything, above normal. Then during the winter—April to October, 1901—the rainfall was well above the average; and thus the subsoil got a thorough soaking (winter rains are usually more effective in buildng up subsoil moisture than summer rains, because during the winter evaporation is at a minimum). Then came eleven months of drought, starting with November, 1901. Thus the dry summer followed a wet winter; and in consequence the light rainfalls in November, 1901, and January, 1902, were of some use, as they could draw on the stored subsoil moisture.

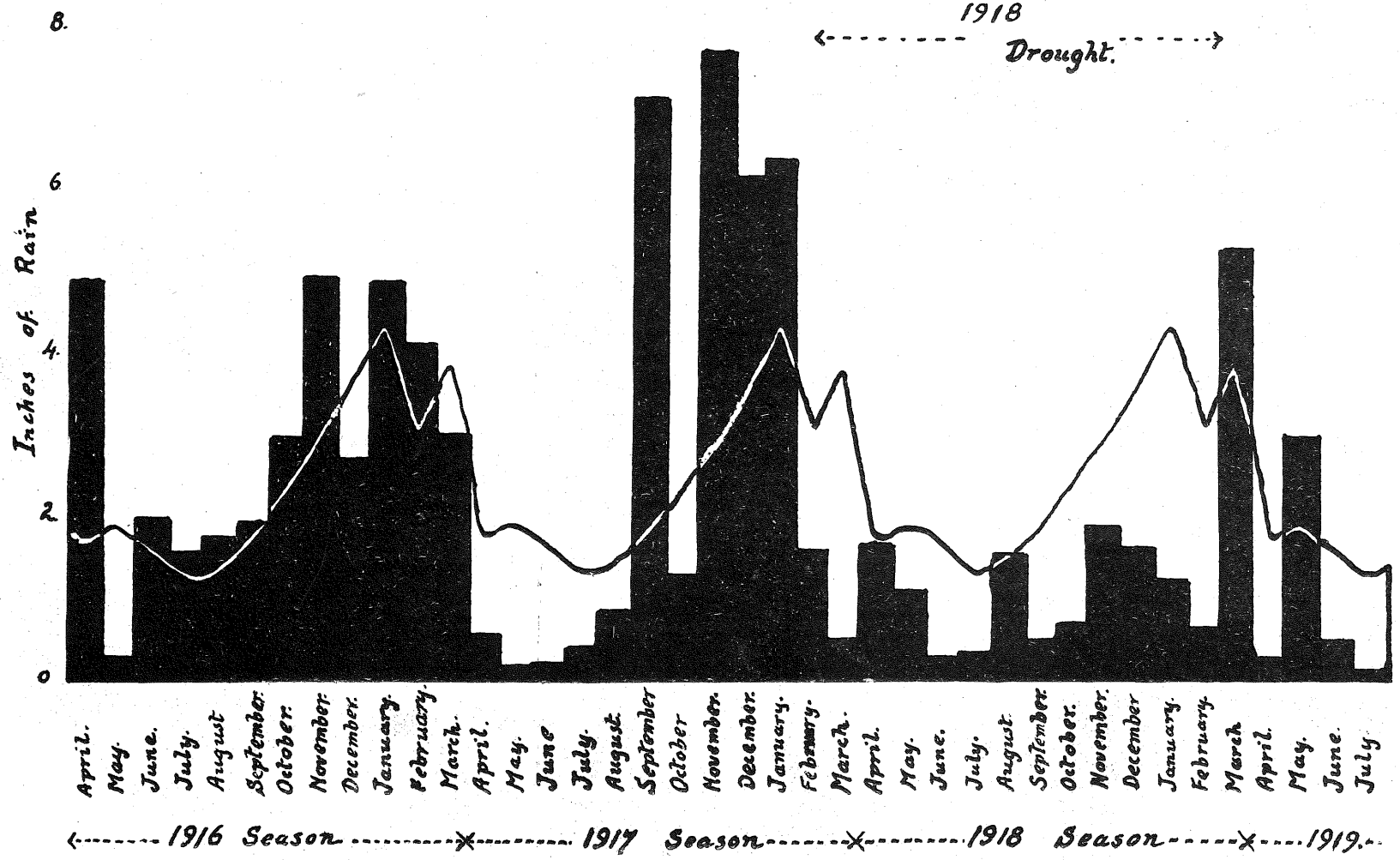
Examining Diagram 2, a difference will be at once noted. The summer of the 1917 season up until January, 1918, was exceptionally wet. Then, commencing with February, 1918, there followed thirteen months of drought; but in this case the dry summer followed a dry winter, and in consequence the light rainfalls during November and December, 1918, and January, 1919, were ineffective. There was no stored-up subsoil moisture to draw on—in fact, so ineffective were the summer rains during the past drought that there was practically no grass, and stock had to be hand-fed almost from May, 1918, up to March, 1919.

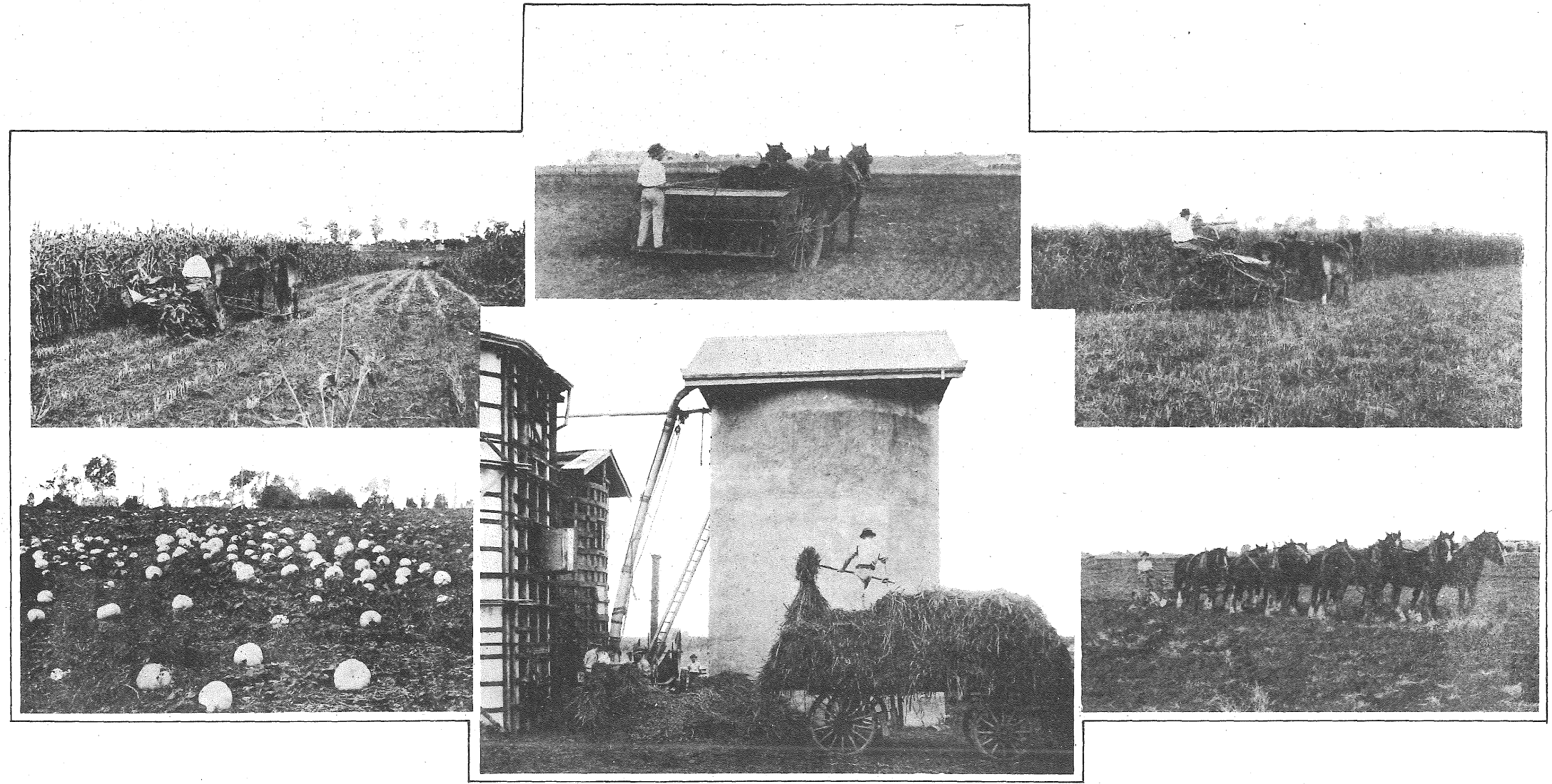
There are several other points to be read from Diagram 2. The season 1916 had a remarkably even distribution of rain, and each month's rain was very similar to the normal average. One would have expected that the season should have yielded excellent crops throughout. This, however, was not borne out in fact. It has to be remembered that 1915 was a dry year, and as a result seed wheat for the 1916 planting was scarce. Much of that procurable was not acclimatised or was of poor quality, and as a result yields were low. This was very much in evidence in the immediate neighbourhood of the College, where most of the wheat crops were very light as opposed to exceptionally good crops grown at the College. This has been referred to in the 1916-17 Report, and the success of the College can only be attributed to the quality of the seed sown. As a matter of fact, the seed we used was of our own growing. Following 1916, there was a complete failure of winter crops during 1917, nor was it possible to secure good stands of new-sown lucerne. Then came an exceptionally wet summer, during which field operations were very difficult and expensive. There was prolific growth, but crops could not be planted or standing crops successfully harvested. This very wet summer coming on top of a dry winter did a great deal of harm to all established lucerne. 1918 saw another failure in winter crops, and again lucerne could not be successfully planted. The older stands of this important crop received another set-back—first on account of the dry, cold winter, and next on account of the dry summer. This, coupled with the invasion of grass due to the impossibility of properly handling the field during the preceding very wet summer, has completed the destruction of the greater portion of the older lucerne stands; while fresh plantings during 1917 and 1918 have been much below normal.

Finally, it will be seen in Diagram 2 that, though the drought broke in March, 1919, there is no indication of a complete relief. In truth, there is distinct indication that for a third consecutitve year winter crops are to fail. This is undoubtedly a serious outlook, and is still more serious when the situation in the Southern States is taken into consideration. Further, it has to be fully recognised that the past few years have resulted in a dry under-soil. So much so is this the case that permanent streams are running very low, and throughout the country one hears everywhere of the scarcity of water. This latter point has to be faced; for what it means is this:—Given rains of fair quantity, we can grow crops on the moisture retained in the surface soil, but, unless we get a number of years of well-distributed rains and above the normal, then the subsoil will remain dry, and in consequence, if there occur even slight breaks in the rains, drought conditions will almost certainly reappear. This may seem a somewhat pessimistic forecast, but it is not intended so; the desire is to place the problem straightforwardly and completely before the country. Once fully realised, I am certain the possible difficulties can be met and overcome.

Obviously, if it is correct, as claimed above, that drought conditions are still with us—that they hold sway in our subsoils at a depth of 4 ft. to 8 ft. or more—then it is of vital importance to take the maximum advantage of whatever rain falls. In other words, conservation of

Inches of Rain
2
4
6
8
April
May
June
July
August
September
October
November
December
January
February
March
April
May
June
July
August
September
October
November
December
January
Febuary
March
April
May
June
July
August
September
October
November
December
January
February
March
April
May
June
July
0 <------1900 Season------X------1901 Season------X------1902 Season------X--1903--
<------1902 Drought--->
1902 Drought


8.
6
4
2
0
Inches of Rain
1918
Drought.
April. May. June. July. August. September. October. November. December. January. February. March. April. May. June July. August. September October November. December. January. February. March. April. May. June. July. August. September. October. November. December January. February March April. May. June. July
1916 Season
1917 Season
1918 Season
1919



QUEENSLAND AGRICULTURAL COLLEGE.

(Cultural and Harvesting Operations.)

fodder is a crying necessity; but such conservation is not the business of the individual only—it is the concern of the whole community, so that possible surpluses in one district can be made available where shortages occur. This matter of conservation has been given careful consideration, and the basic difficulty seems to me to be the matter of finance; for it is quite evident that when a season is very good—

(1) The immediate market value of the produce is low;
(2) Extra labour, often higher priced, is required to handle the larger crop;
(3) As larger crops come with wetter seasons, difficulties of harvest increase cost of production.

Thus, if the individual farmer is dependent only on his own resources, he is faced with the following problems:—

(1) Have I sufficient idle capital to afford to tie up a considerable amount in stacks with the chance of obtaining a remunerative price later on?
(2) How long is it likely to be before such a remunerative price would obtain?
(3) During the time my capital is tied up in stacks, could I obtain a loan on them in the event of my requiring it?

To the first question the average answer would be—No. In truth, the average farmer is undercapitalised, not over; and he requires each year's revenue to finance that year. Under these circumstances he is inclined, during extra good years, to neglect his harvest for the simple reason *that the expense of harvesting may be easily in excess of the immediate market values.* In other words, he cannot afford to work at a loss.

To the second question there is no present possibility to give a definite reply. Yet, if this reply could be given, it would go far to solve the whole matter.

To the third question the answer is almost certain to be—No. But, if conserved fodder could be rendered safe security, the financing of conservation would be solved.

With the above points in view, the following tentative suggestions are submitted, trusting that they may serve some useful purpose in solving this most important matter of fodder conservation:—

Let statistical records be established showing, for each of the major crops and for as many of the minor crops as possible—
(*a*) The future requirements;
(*b*) The quantities in hand—that is, conserved;
(*c*) The quantities in sight.

Such information should be brought up to date and published at least once each month. Certainly the required information may be somewhat difficult to obtain; but, once reliable information of this nature is available, it would preclude over-conservation and, in consequence, would immediately give to conserved fodder a considerable value as security for loans. The main element which depreciates conserved fodder as security is the risk of over-production—that is, there is no guarantee of stability of value; but, with the knowledge that carefully prepared statistics would afford, financiers would be in a much better position to gauge the risk that could properly be taken.

Again, it could be argued that conserved fodder would be unsafe security because such fodder might easily be disposed of without the knowledge of the lender. This may be the case, but the matter could be met by several precautions. For example, the loan should not be much in excess of the cost of production. Then such an interest might be charged as would cover probable losses and even insurance. Also, some regulations might be framed which will require a permit to tranship fodder. Finally, some scheme of mutual guarantee might be devised, for undoubtedly much of the security must be the personality of the borrower. Hence if five or six men, all knowing one another well, will mutually guarantee one another, a very big element of stability in the security would result.

The difficulties are many, but the objective aimed at—viz., fodder conservation—is of vast importance to the whole community. *Systematic conservation would be practised if it can be financed,* and the only sound basis for any such finance is accurately prepared and up-to-date statistics. But, beyond the question of conservation, such suggested statistics would be of vast importance, because the efforts of individual farmers would be directed towards the production of such products as are short—that is, in the direction likely to be of most benefit to themselves and the State. Incidentally, the total effect would be to stabilise the market values of our chief products, so that the low prices of a glut would be avoided, while, on the other hand, the excessive prices ruling in times of drought would be prevented.

Education.

The session ending June, 1918, closed with 28 students. Of these, 6 left and 6 new students entered, leaving a total of 28.

At the Annual Examinations in December, 1918, the following results were obtained:—

Third Year in Agriculture.—Astill, R. W.; Benson, H.;* Brightwell, A. D.; Landells, L. J.; McGrath, J. L.; and Park, H., obtained the College Diploma in Agriculture.

Second Year in Agriculture.—Bennett, E. C.; Lee, H. A.; Nicholson, G. W. M.; and Tighe, V., passed. Cottell, F. R., failed.

First Year in Agriculture.—Andrews, G. S.; Eales, C. C. J.; Gillingwater, F. J.; Irwin, J. N.; Higgins, T. J. M.; Horneman, W. B.; and Pidcock, H. F., passed. Barnett, G. B.; Belt, K.; Henzell, D. E.; Major, A. E.; and Spiller, G., failed.

Second Year in Dairying.—Jackson, W. H., obtained the College Diploma in Dairying. Hodges, R. K., failed.

First Year in Dairying.—Herbert, Thos., passed.

Heindorff, J. W., secured certificates for Butter-making and Milk and Cream Testing.

In December, 1918, 14 students left, 6 of these having completed their course of training.

*Passed at a deferred examination in June, 1919.

Several of the remaining 8 left on account of the drought. Eleven new students joined in January, 1919; so that the session opened with 25 on the rolls.

Returned Soldiers.—Up to June, 1919, 46 returned soldiers had entered the College; and during the past year a further 33 have joined for instruction in General Farming, Stock, Dairy Farming, Butter-making, &c.; the period of training varying from three to six months.

Winter School for Farmers.—Owing to the pneumonic influenza epidemic, this school was not held this year.

Poultry Conference.—The second annual conference of poultry-breeders was convened by the College, and was held during the latter part of August. About 120 took advantage of the invitation to attend, and matters of interest to the poultry industry were discussed. During these first two conferences discussions have been somewhat informal; but, now that all those who have attended feel that the conference is of value to them, I can trust that definite subjects will be selected, so that as full information as possible may be collected and furnished.

Visitors.—During the year 400 visited the College, many coming for the express purpose of obtaining information in regard to some specific branch of Agriculture. Amongst the visitors we had the honour of entertaining the French Mission that visited Australia under General Pau.

Agricultural Education.—Considering this matter from a broad standpoint, it seems strange to find that there is no general appreciation of the value of systematic technical education with respect to Agriculture and Stock, our most important industry. Even when boys are sent to the College, many of them think—and many of their parents also think—that a complete knowledge of Agriculture can be got in a few months or at best a year. This is far from being true, for there is no industry which requires such a wide scope of technical knowledge—a knowledge ranging from Chemistry to Mechanics and Engineering, from the Laws of Heredity to Veterinary Science, from Bookkeeping to the Principles of Stock Feeding, from Seed Testing to the Eradication of Insect Pests, &c. Certainly it can be claimed that Agriculture is carried on and Stock are raised without the general distribution of this technical knowledge. But what is the average grade of these rural operations? Would not greater knowledge assist, and assist greatly, in the efficient development of our Agriculture? It undoubtedly would; and this being so, the question naturally rises—Why is there existent this lack of appreciation of the value of technical knowledge to Agriculture? I think that the primary cause can be found in our general education system. If this system be examined, it will be found that the "force of suasion" of the teaching is towards the towns and away from the country; that the brighter intellects, as they move up the grades in their education, are automatically alienated from rural life. This, I feel sure, is the basic cause for Agricultural Education receiving so little appreciation; and in a new country, requiring rapid development, it is an aspect of the subject which deserves consideration.

In writing the above, there is no intention of advocating the introduction of Technical Agricultural training in all schools. All that is suggested is that something of the history of achievement, something of the glory of success, something of the Romance of Agriculture, should be incorporated in all our school books and school teaching. Were this the case, it would stimulate an interest and enthusiasm in the minds of many. Some would go back to farms with broader outlook and better ideas; some others may proceed for higher training in Agriculture; the majority would probably pass on through the schools as at prsent; but all would carry away with them some better conception of Agriculture, its needs, and its aspirations.

Improvements.

During the year all the old poultry yards and pens were transferred to the new site. The old pens were remodelled, and all yards and buildings set out according to the most approved plans. Taken altogether, the College Poultry Farm is now up-to-date, and of a design which might well be imitated by any poultry farmer. The buildings are simple and efficient, inexpensive, and yet permanent; while the whole layout has aimed at economic working.

The College land along the banks of the Lockyer Creek has been cleared of pear and the chestnuts cut down. A considerable amount of fencing has been shifted, and places where the creek could be crossed guarded. This has converted some 50 acres of the College property from a weed-infested useless area into a very fine stock paddock.

The Siding road, which had got into a very bad state during the heavy summer rains of 1917, has been top-dressed, and the avenue rising the top of the College Hill cut down, so as to eliminate an objectionable steep pinch.

Outside Sections.

Since taking charge of the College it has been my consistent endeavour to render the outside sections as self-supporting as possible. On the educational side the College cannot be expected to pay; but on the practical side, where we are chiefly a stud farm, returns should be obtained which should practically cover expenditure. Such results, however, must be the average over a number of years, and cannot be expected every year. In respect to this it is unfortunate that seasons since 1915 have been unfavourable. With the exception of 1916, production on the farm has been below normal (*see* description of the drought above), and the adverse conditions have been extremely severe during the past twelve months. What happened in 1916 is a fair indication of what might have been the position at the College under more favourable climatic conditions; for in 1916 we conserved a large amount of fodder—in fact, sufficient to carry all stock through the dry winter of 1917, and then through the 1918 drought up to October, 1918. That every opportunity was seized to try and obtain early summer crops this year is indicated later. Such efforts were failures; and, reviewing the whole situation broadly, the following question is raised:—

As the College is a stud farm feed for the stock is absolutely essential. Further, as droughts are likely to recur, it is necessary to conserve fodder so as to cover periods of shortage.

Normally, the College Farm will be able to grow sufficient feed to allow of such a conservation to be built up until we have, say, two years' feed in hand. If this two years' conservation is decided on as a safe margin, then wouldn't it be economic practice for the College to purchase fodder at once to make good any shortage of stored fodder on those occasions when the farm fails to produce up to expectations? This would be practising systematic conservation, and would enable us to purchase any necessary fodder under the most favourable circumstances. Even suppose that subsequent seasons were so good that fodder purchased under the above conditions proved to be unnecessary, no loss should result; for then the farm would over-conserve, and would be in a position to unload at remunerative prices during some future time of shortage. This is purely a case of locking up an amount of capital in stacks, &c., and waiting for returns.

The following details of the year's operations are submitted:—On the farm all crops were practically failures until the rain fell in March, 1919. Then, having a big area in good tilth, both summer and winter crops were rushed in. As a result, we have obtained large quantities of silage; but the season was too far advanced to make hay of such crops as Panicum or Soudan Grass. Of the winter crops planted, one area of 25 acres of wheat, planted very early, will yield fairly well; but all other straw crops are only just holding their own, and will be failures unless rain falls shortly. The new seedings of lucerne, which came up well, are also badly in need of rain.

With regard to the other sections of the farm, it will be noted that the Piggery, the Poultry Farm, Sheep and Dairy Herd have all yielded higher returns than last year, and this in spite of the fact that, owing to the drought, stud animals were not in as great a demand as anticipated. The Dairy Factory has also yielded a fair return. In truth the total receipts of the College during this year have been the highest ever obtained, and this is an indication of what the position would have been had the season been anything like normal.

Farm.

	Tons.
Silage—In two silos	291
In underground silo ..	136
In stacks	144
	571
In sight in paddocks	210

It is estimated that 100 tons from the paddocks will be required to complete the silos. The remaining 110 tons is being cut for cattle and horse feed.

It is estimated that 200 tons of cattle and table pumpkins are in sight; 91 acres have been planted in lucerne; 65 acres have been seeded with wheat, about 25 giving good promise; and 37 acres seeded with oats—all of which is badly in need of rain.

Horses.

No sales of this class of stock were made during the twelve months under review. The following were the receipts for service of mares and agistment:—

	£	s.	d.
Mares sent to College for service, 6 head	18	18	0
Agistment on above	3	12	0
Total	£22	10	0

Horses at College on 30th June, 1919.

	Head.
Clydesdale stallions	3
Mares	41
Geldings	26
Mules	2
Foals and young stock not yet broken in	9
Total	81

The Dairy Factory.

Operations in this section were much below anticipations; but it was practically impossible for the suppliers to keep their cows milking during the summer.

Disbursements.

	£	s.	d.
Purchase of cream from suppliers	2,580	15	3
Dairy herd supplies	579	11	0
Total	£3,160	6	3

Receipts.

	£	s.	d.
By cash sales of butter	3,130	14	5
By dining-hall butter, milk, ice ..	442	19	11
By skim and whole milk to calves	70	4	4
By skim and butter milk to piggery	19	8	11
By refrigeration for butchery ..	5	9	9
Total	£3,668	17	4

Showing a balance of £508 11s. 1d. to cover working expenses, salaries, &c.

Dairy Herd.

Cattle Sold, 1st July, 1918, to 30th June, 1919.

—	Bulls.	Cows.	Value.					
			£	s.	d.	£	s.	d.
Ayrshires ..	5	..	105	0	0			
	..	10	137	18	3			
						242	18	3
Jerseys	2	..	47	5	0			
	..	5	76	16	0			
						124	1	0
Holsteins ..	2	..	..			78	15	0
Guernseys ..	1	..	..			35	0	0
Shorthorn ..	..	1	..			8	8	0
Grade calves and steers, 17 head			..			58	0	0
Service of bulls			..			1	0	0
Total for which cash received			..			548	2	3
Killed for College dining-hall, 3 head			..			23	10	0
Milk supplied to dairy factory ..			..			579	11	0
Grand total			..			£1,151	3	3

Dairy Cattle at College, 30th June, 1919.

	Stud Bulls.	Stud Cows.	Young Bulls.	Heifers and Female Calves.	Total.
Ayrshires	3	22	13	20	58
Jerseys	3	20	9	17	48
Holsteins	2	7	4	3	16
Guernseys	1	2	..	1	4
Shorthorns	..	5	..	..	5
Totals	9	56	26	41	132
Steers	..	..	..	..	3
Grade calves (to be castrated) ..	..	..	..	..	2
Grand total ..	..	..	..	..	137

Horticultural Section.

	£	s.	d.
Orchard sales	95	0	0

Sheep Section.

	£	s.	d.
Sales of sheep	72	14	5
Killed for dining-hall	72	9	1
Sale of wool	206	17	10
Total	£352	1	4

PIGGERY.

SALES OF PIGS, 1ST JULY, 1918, TO 30TH JUNE, 1919.

—	Boars.	Sows.	Value £ s. d.	£ s. d.
Berkshires ..	27	..	93 7 0	
	..	28	140 11 0	
				233 18 0
Yorkshires ..	18	..	59 2 0	
	..	16	61 6 0	
				120 8 0
Grades and culls sold as baconers, 216 head			..	600 3 6
Service of sows, 20 head			..	5 0 0
Keep of sows sent for service ..			..	3 13 8
Pig crate			..	0 7 6
Total cash received ..			..	963 10 8
Killed for College dining-hall, 52 head			..	41 3 4
Grand total			..	£1,004 14 0

PIGS AT COLLEGE ON 30TH JUNE, 1919.

Breed.	Stud Boars.	Stud Sows.	Young Stock and Barrows.	Total.
Berkshires	4	24	108	136
Yorkshires	2	15	81	98
British Black	..	1	..	1
Crossbreds	..	..	3	3
Totals	6	40	192	238

POULTRY SECTION.

SALES OF POULTRY AND EGGS, 1ST JULY, 1918, TO 30TH JUNE, 1919.

—	Settings.	Birds.	Value. £ s. d.	£ s. d.
White Leghorns ..	42½	..	22 18 0	
	..	82	69 9 0	
				92 7 0
Brown Leghorns ..	16	..	10 1 6	
	..	28	23 9 0	
				33 10 6
Indian Game ..	10	..	6 2 0	
	..	6	5 10 0	
				11 12 0
Black Orpingtons	33½	..	18 15 6	
	..	50	32 7 6	
				51 3 0
S. L. Wyandottes	7	..	4 12 0	
	..	14	10 12 0	
				15 4 0
Rhode Island Reds	33½	..	20 12 6	
	..	68	27 5 0	
				47 17 6
Houdans	1	..	..	0 10 0
Buff Orpingtons ..	0½	..	..	0 5 0
	144	248		
Carried forward ..	..	..	..	£252 9 0

The following young stock were supplied to the Returned Soldiers' Land Settlement Committee:—

	Head.	£ s. d.	£ s. d.	£ s. d.
Brought forward ..	..	..	£252	9 0
White Leghorns	932	51 0 0		
Brown Leghorns ..	25	3 2 6		
S. L. Wyandottes ..	10	1 5 0		
Black Orpingtons ..	13	2 7 6		
Rhode Island Reds ..	228	17 5 0		
			75	0 0
Total	1,208			
Other Sales—				
Table fowls sold for cash, 384 head		..	52	15 4
Table eggs sold for cash, 168¾ doz.		..	12	7 5
Keep of fowls reared for Returned Soldiers		..	4	10 0
Fowl crates, 8		..	1	12 0
Total sales for cash		..	£398	13 9
Dining-hall—				
Table fowls, 179 head ..		20 12 6		
Table, eggs, 193 dozen ..		11 8 5		
			32	0 11
Total returns		..	£430	14 8

EGG-LAYING COMPETITION.

Receipts.

Entry Fees				£85 0 0
Sales.	Dozen.	Average Price Per Dozen. s. d.	£ s. d.	
1918—				
April	333 4/12	2 3	37 10 0	
May	498 3/12	2 3¼	56 11 5	
June	524 9/12	1 11½	51 7 8	
July	567	1 3¼	36 0 6	
August ..	668 7/12	0 9½	26 9 3	
September ..	662 3/12	0 8¾	24 2 11	
October ..	630 3/12	0 9½	24 18 11	
November ..	593 10/12	0 11¼	27 16 9	
December ..	577 8/12	1 3½	37 6 2	
1919—				
January ..	519	1 4¾	36 4 5	
February ..	408 1/12	2 0	40 16 2	
March ..	370 7/12	2 2	40 2 11	
				439 7 1
Total Receipts				£524 7 1

Expenditure.

	£ s. d.	£ s. d.
Prize money		50 8 0
Food—		
Wheat, 314 bushels	72 13 0	
Cracked corn, 30 bushels	7 9 2	
Hulled oats, 15 bushels	6 14 11	
Pollard, 390 bushels	32 10 0	
Bran, 195 bushels	15 16 10	
Dried blood, 5½ cwt.	4 10 9	
Meggitt's meal, 7 cwt.	2 15 3	
Green lucerne, valued at	2 0 0	
Soup meat, valued at	3 0 0	
		147 9 11
Balance		326 9 2
Total		£524 7 1

REPORT OF THE AGRICULTURAL CHEMIST.

SIR,—I have the honour to submit to you herewith my Twenty-second Annual Report on the work of the Chemistry Division of your Department for the year ended 30th June, 1919.

STAFF.

In December Mr. V. S. Rawson, M.S.E.A.C., was appointed an Assistant Chemist to our staff; and his special knowledge of agricultural experimental work should be of great service to the Department. We were working short-handed throughout the year, as our two junior assistants have not as yet returned from the Front.

The reduction in the number of dipping fluids and butters received enabled the staff to keep abreast of the work, which was largely increased in several directions.

The whole of the staff did very satisfactory work.

LABORATORY.

The supply of glassware and chemicals is still in a very unsatisfactory state, and the cost of many of the items is quite prohibitive.

WORK PERFORMED.

The following table gives a summary of the samples received and analysed during the year:—

——	1916-17.	1917-18.	1918-19.
Soils, complete analysis ..	75	40	122
Soils, partial analysis	48	16	..
Waters	26	42	95
Dipping fluids	2,484	2,268	1,273
Dip concentrates	14	19	17
Milks and creams	103	129	110
Butters	108	109	18
Margarine	..	..	4
Condensed milks	73	81	12
Cheeses	52	76	3
Fertilisers	117	150	91
Wheats, milled, and flour ..	14	7	3
Fodders and grasses	3	19	5
Stock foods	..	..	42
Sugar-canes	14	3	..
Leathers	24	11	44
Tanning materials	34	38	8
Viscera, stomach contents, &c.	37	36	37
Sugars and molasses	6	10	10
Dairy salt and preservatives ..	5	5	9
Parchment papers	2	2	..
Limestones, marls, &c. ..	6	17	37
Rocks	8	12	25
Ashes	8	40	4
Jams and preserves	..	45	28
Various	72	58	96
Total	3,333	3,223	2,093
Glassware tested	4,334	8,622	6,574

SOILS.

The soils analysed during the year are recorded on Table I. Some of the soils which have been in cultivation for some years show distinct signs of depletion, and the fact that even rich soils should be fertilised, if cropped, cannot be sufficiently emphasised. Again we must notice that in a large number of soils the lime-magnesia ratio, on account of high amounts of magnesia, is not favourable. Fortunately, the magnesia appears to be in much more insoluble form, and the 1 per cent. citric and solution shows generally a much more favourable ratio. Only carefully conducted experiments, applying various amounts of lime, which are being started, will enable us to form some judgment of the importance of this lime-magnesia ratio.

The important question of maintenance of soil fertility is occupying the attention of many investigators, and the question of judging fertility by analysis is still unsettled. The watery soil solution is undoubtedly an important factor; and latest researches show that the composition of the soil solution, or watery extract containing the soluble nutrients, not only varies from season to season, but actually from day to day in any soil, and is influenced by growing crops, by bacterial action, and particularly the carbonic acid content of the soil moisture.

Some of the soils of our State Farms, Experimental Stations, and Agricultural College Farm have not been analysed for nearly twenty years; and on my suggestion fresh samples were obtained, as near as possible from the same spots where previously taken, to be submitted to full analysis; the most of these analyses have already been completed, but are not reported in above-mentioned soil analysis table, but will be reported on completion of this work in a separate Bulletin or Agricultural Journal.

In the April number of "The Queensland Agricultural Journal" I gave a summary of "Lime and Magnesia in Queensland Soils."

Several investigators connect the acidity of soils with their contents of iron and alumina compounds. C. H. Spurway establishes for certain glacial-formed soils a definite relationship between the ratio of calcium to iron and alumina soluble in N/5 hydrochloric acid, and the soil reaction. All acid soils have ratios $CaO \div (Fe_2O_3 + Al_2O_3)$ above $1 \div 1{\cdot}3$; and all alkaline soils have ratios below this figure.

We made an investigation on these lines with some of our most characteristic Queensland soils (Table II.); but found that this ratio does not apply to our soils, but that the lime requirement established according to Hutchinson and McLennon's method gives a better approximation of the soil reaction. The amount of lime soluble in 1 per cent. citric acid also gives a fair indication of the lime requirement; and only in soils containing large amount of humus—like, for instance, in a sample (No. 635) of the volcanic soil from the Kairi State Farm, on the Atherton Tableland—the lime requirement is much higher than expected from the good amount of lime found available.

There is a considerable difference in the amounts of nutrients extracted according to the quantities of N/5 HCl used; and, as Spurway did not state the ratio of acid to soil, we used 1 part of soil to 10 parts of acids for the tests, except for two soils which were also tested at the rate of 1 soil to 5 acid, as recorded on Table II.

DIPPING FLUIDS.

The number of dipping fluids tested this year (1,273) is practically only one-half of the numbers tested in the previous two years. The

reduction is undoubtedly largely due to the introduction of the portable dip fluid tester supplied by the Department to the Stock Inspectors. This tester, although not reliable in presence of arsenates, has proved its value in a large number of cases, and is a great saving of time when dips have to be quickly tested on the spot.

With regard to the composition of the fluids submitted, unfortunately very little improvement is shown according to the tabulated statements given below, and only about 30 per cent. may be considered as effective:—

·5% (last year 1·0%)	contained from 0 to 2 lb.	of Arsenious Acid. As_2O_3 per 400 gal.
2·6% (last year 6·8%)	contained from 2 to 4 lb.	
11·5% (last year 18·7%)	contained from 4 to 6 lb.	
13·5% (last year 17·0%)	contained from 6 to 7 lb.	
18·3% (last year 20·0%)	contained from 7 to 8 lb.	
19·9% (last year 13·0%)	contained from 8 to 9 lb.	
12·5% (last year 7·6%)	contained from 9 to 10 lb.	
21·2% (last year 15·9%)	contained 10 lb. and over.	

70·2% (last year 82·2%)	were free from oxidation	of Arsenious Acid. As_2O_3 per 400 gal.
9·1% (last year 4·9%)	contained from 0 to ·5 lb.	
·4% (last year ·4%)	contained from ·5 to 1 lb.	
2·5% (last year 1·9%)	contained from 1 to 2 lb.	
3·0% (last year 2·9%)	contained from 2 to 3 lb.	
14·8% (last year 7·7%)	contained 3 lb. and over	

The number of dipping fluids found to contain 10 lb. and over of arsenious acid per 400 gallons is too high, and is in most cases due to wrong sampling of the fluids, caused frequently by the use of dirty buckets or dippers and bottles containing previously some concentrated solution, but must be also attributed in a large number of cases to a deliberate preparation of specially strong samples of fluids for analysis.

One dip-owner forwarded a sample four times too strong, and, on being informed to that effect and asked for another sample, stated in his letter that the fluid could not be made any weaker without influencing the efficacy; and, strange to say, on receipt of the second sample, which was evidently taken from the dip and not "faked" in any way, it was found to be only half strength and practically useless for dipping purposes. The question naturally arises how many of the other samples received and analysed are really true samples of the fluids used in the dips.

I have repeatedly pointed out that in the absence of a sufficient number of inspectors, who really should take all samples personally, a regulation should be framed and administered: that the sending of dipping fluids, not true samples of the fluids used in the dips, is an offence under the Diseases in Stock Act.

The preparation of dipping fluids from the ingredients laid down by regulation is not as simple as it looks; and, therefore, I have always strongly advocated the use of approved commercial concentrates. The use of concentrates has been influenced by the temporary recognition, during the period of War, of concentrates which are not of a homogeneous nature, and which on this account have caused trouble in many cases; the use of such concentrates will now be stopped.

The use of concentrates in solid form should be encouraged for several reasons, although they involve a little more trouble and care to make the dipping fluid than the use of liquid concentrates. It is pleasing to note that one of the concentrates in bar or soap form "Kiltic" shows that, of the number of fluids submitted for analysis and prepared therefrom, about 80 per cent. were of approximately correct strength. Again, fluids prepared from "Royal Dip No. 2," a homogeneous liquid concentrate now largely used instead of the old Royal No. 1, which was never recognised, 68 per cent. of the fluids tested were approximately correct, which is to be considered very satisfactory when we find that of the whole number of fluids tested only 20 per cent. were found nearly correct. This unsatisfactory number is undoubtedly due largely to the fact that still about 30 per cent. of the dipping fluids submitted are made from arsenic and soda alone—a formula which can never give absolutely satisfactory results, and is, therefore, not recognised by the Department.

An investigation with regard to experimenting with dipping fluids in a simple practical manner, which I recommended in my last annual report, has so far not been initiated, although the importance is generally recognised.

Waters.

A very large number of waters (95) were submitted for analysis, in order to ascertain their suitability for stock or irrigation, of which number, chiefly on account of high salinity, 29 samples were unfit for stock and 56 samples unfit for irrigation.

In some cases of necessity the saline water can be used by mixing it with a sufficient amount of fresh water.

As the results of these analyses are not of general value, and analyses are not published.

Dairy Products.

The number of the analyses of butter, cheeses, and condensed milk was greatly reduced, because all samples taken by the Commonwealth graders for checking export were analysed elsewhere. A very interesting investigation, involving considerable amount of analytical work, was carried out, on the instigation of the Chief Dairy Expert, under the supervision and aid of Inspector Hartley, at several butter factories to ascertain the amount of butter fat introduced into the factories and actually obtained in commercial butter. Further tests are being made, and when completed will be published.

Testing of Dairy Glassware.

Under "*The Dairy Produce Acts,* 1904 *to* 1905," the following amounts of glassware, &c., were tested:—

——	Number Tested.	Approved.	Condemned.	Broken.	Percentage Condemned.
Cream bottles	4,391	4,196	183	12	4·2
Milk bottles	1,262	1,116	143	3	11·3
Pipettes	666	651	3	12	·5
Thermometers	255	252	3	..	1·2
Total	6,574	6,215	332	27	5·1

We also prepared and tested 96 quarts of N/10 alkali solution and 37 pints of standard iodine solution.

Fertilisers.

Under "*The Fertilisers Act of* 1914" 73 firms were registered as dealers; 91 samples of fertilisers were taken by our inspectors, and in the majority of cases found to conform with the requirements of the Act.

Stock Foods.

On account of the high prices of all raw materials and by-products ruling the past few years, the question of economic feeding of stock became very important. Particularly in the use of prepared concentrated foods for feeding of calves, the dairy farmer and breeder is seriously handicapped by being charged high prices for foods frequently not suitable for the purpose.

In an article on "Calf Foods," which appeared in the March number of "The Queensland Agricultural Journal," I fully reported on this matter, and showed that practically all calf foods which were analysed were charged from two to three times their actual value, and could not be considered as substitutes for milk.

Dairy and poultry farmers suffered under the disability of obtaining good qualities of bran and pollard; and a large number of pollards were received which were practically unfit for food, and found upon analysis to be not pollard at all, but simply spoiled and damaged wheat or mill sweepings crushed up.

With regard to poultry foods, analyses of which were published in the June Journal, it was found that only in a few cases exorbitant prices were charged, but that the majority of foods produced by a leading firm of manufacturers were unquestionably fair and good value. Of course, it must be recognised that it is practically impossible to fix an absolutely fair and correct unit value for the various nutriments, based on the cost of by-products, particularly as the manufacturer of suitable poultry and chick feeds must use various classes of grains, which must be of a much higher cost than by-products. It is only fair, however, that the purchaser should know what he gets, and particularly be protected from getting foods made from inferior, diseased, and uncleaned grain, and also what the average composition of the food may be. A variety of food and grain is of greatest importance to all animals; and it is, therefore, only natural that for a mixed concentrated food, compounded on scientific lines, the value may be considerably raised by inclusion of certain necessary but expensive grains.

The science of feeding stock economically and rationally is practically unknown in Australia, and for this reason not only large amounts of foods go practically to waste, but not even the best results are obtained from the foods used. The intelligent poultry farmer has already commenced the use of commercially prepared poultry foods, and finds the great benefits derived therefrom; but a large expansion in the use of such foods is possible and desirable.

The honest manufacturer of mixed foods is unquestionably to be encouraged, as he is able to buy at lowest rates and can utilise by-products and low-grade fodder, which otherwise are frequently allowed to go to waste. If such prepared foods are procurable at reasonable rates, the stockowner and dairy and poultry farmer will derive great profits from their use.

The manufacture of suitable balanced concentrated feeds for various purposes is a science of its own, requiring, besides scientific knowledge, years of practical experience and study of local conditions. Every now and then attempts are made to produce stock foods on a small scale in an amateurish way, varying in composition from day to day, which foods in the majority of cases were found to be absolutely unfit for the purposes they are sold for, and as a matter of fact, in a few cases the food would have been actually dangerous to use.

A properly administered Stock Food Act would protect the manufacturer and consumer alike, and the sale of unsuitable mixtures of prohibitive cost would become a thing of the past.

Limestone, Rocks, Etc.

A considerable number of limestones were analysed and found to be in the majority of cases of good commercial value. It shows that suitable material for preparation of agricultural lime exists all over Queensland, and could be utilised by farmers, as long as quarrying and crushing could be carried out at reasonable cost.

Agricultural lime must be cheap to be utilised by farmers, as generally large amounts per acre have to be applied periodically if it is to be of any use.

Many samples of rocks, &c., were submitted to be tested for potash contents, but no material of commercial value was found.

Jams and Preserves.

A large number of preserved pineapples were tested and found to be generally of good quality, and only in a few cases the syrup was rather too light. Some of the samples were of exceptionally fine quality, equal to anything canned elsewhere.

I have, &c.,

J. C. BRÜNNICH, Agricultural Chemist.

TABLE I.—Analyses of Queensland Soils.

Laboratory No.	Locality.	Description of Soils.	Reaction.	TOTAL ELEMENTS IN THE SOIL.										Available Plant Food Soluble in 1 per cent. Citric Acid.				Total Elements, Lb. per Acre, 12″ Deep.				Available Plant Food, Soluble in 1 per cent. Citric Acid. Lb. Per Acre, 12″ Deep.			Cwt. of Lime required per Acre, 12″ Deep.
				Moisture.	Humus.	Combined Water and other Organic Matter	Chlorine.	Nitrogen.	Soluble in Hydrochloric Acid, Sp. Gr. 1·115.																
									Phosphoric Acid.	Lime.	Magnesia.	Potash.	Total Insoluble Matter.	Phosphoric Acid.	Lime.	Magnesia.	Potash.	Nitrogen.	Phosphoric Acid.	Lime.	Potash.	Phosphoric Acid.	Lime.	Potash.	
				%	%	%	%	%	%	%	%	%	%	%	%	%	%								
	Cook and Burke—																								
176	Mount Molloy ..	Grey loam ..	Acid ..	1·56	1·72	3·90	·017	·090	·05	·16	·17	·06	83·74	·0034	·0276	..	·0056	3,158	1,754	5,614	2,105	119	968	197	51·5
177	Ditto	Light-grey sandy loam	Acid ..	1·14	·20	2·57	·012	·028	·02	·11	·10	·08	88·99	·0012	·0070	..	·0039	982	702	3,860	2,807	42	246	137	43·75
807	Burke and Porchester	Light-brown clayey soil	Slightly acid	5·22	·19	4·25	·007	·034	·02	·56	·73	·41	74·61	·0042	·1434	·0284	·0053	1,341	789	22,090	16,170	166	5,656	209	Nil.
808	Ditto	Light-red sandy soil	Slightly acid	·19	·20	1·08	·008	·028	·02	·21	·12	·20	94·61	·0062	·0454	·0135	·0070	1,226	876	9,196	8,758	271	1,988	307	5·5
809	Ditto	Dark-grey clayey soil	Slightly alkaline	6·03	·27	6·46	·007	·039	·07	1·51	·73	·52	63·85	·0606	·9542	·0906	·0017	1,390	2,494	53,810	18,530	2,159	34,010	61	*18*
817	Ditto	ditto ..	Slightly acid	4·43	·60	4·84	·005	·056	·06	·96	1·01	·26	72·19	·0037	·9576	·0259	·0004	1,965	2,105	33,680	9,123	130	33,600	14	*18*
818	Ditto	Grey clayey soil	Slightly acid	3·40	·50	3·63	·007	·034	·03	·99	2·16	·03	79·95	·0013	·2118	·0528	·0031	1,276	1,126	37,160	1,126	49	7,950	116	*1·5*
	Mitchell—																								
795	Ilfracombe ..	Light-brown clayey soil	Neutral..	6·50	·57	6·39	·012	·140	·11	1·48	1·19	·77	64·51	·0182	·2915	·1274	·0154	4,494	3,531	47,505	24,715	584	9,356	494	20·3
	North Kennedy—																								
98	South Johnstone ..	Red loam ..	Strong acid	2·77	1·88	14·04	·050	·229	·27	·09	·04	·03	40·00	·0020	·0102	..	·0097	8,036	9,474	3,158	1,053	70	358	340	..
99	Ditto	ditto ..	..	1·52	·83	14·69	·050	·115	·26	·08	·01	·06	39·58	·0015	·0110	..	·0072	4,035	9,122	2,807	2,105	53	386	253	..
100	Ditto	Yellow-red loam	Acid ..	2·61	1·92	16·44	·023	·145	·29	·15	·08	·02	38·16	·0010	·0086	..	·0062	5,088	10,170	5,264	702	35	302	218	..
101	Ditto	Red loam ..	Strongly acid	7·02	2·50	20·34	·037	·257	·34	·06	·05	·03	16·33	·0008	·0490	..	·0183	9,038	11,930	2,105	1,053	28	1,719	642	..
102	Ditto	Red clay loam..	Acid ..	2·74	1·08	17·58	·048	·084	·34	·13	·04	·03	17·47	·0008	·0140	..	·0236	2,947	11,930	4,564	1,053	28	491	828	..
103	Ditto	Red loam ..	Strongly acid	5·23	2·17	19·68	·049	·224	·28	·12	·01	·03	24·46	·0011	·0308	..	·0135	7,860	9,825	4,211	1,053	39	1,081	474	..
104	Ditto	Red clay loam..	Slight acid	3·83	1·03	19·10	·054	·078	·28	·12	·07	·02	20·01	·0010	·0148	..	·0149	2,737	9,825	4,211	702	35	519	523	..
	South Kennedy—																								
436	Telemon Plains ..	Black clay ..	Alkaline	11·20	·62	7·56	·004	·025	·26	2·48	2·34	·27	5 ·61	·0087	·3129	..	·0052	877	9,022	87,040	9,548	305	10,983	182	*2-3*

769	Bowen River ..	Black clay ..	Slightly alkaline	7·62	·85	6·85	·006	·070	·04	1·05	·91	·40	65·98	·0013	·2968	·0516	·0117	2,399	1,508	35,985	13,810	45	10,172	401	*6·25*
770	Ditto	Chocolate clay..	Alkaline	13·08	1·05	8·53	·007	·076	·22	2·70	2·50	·20	51·47	·0042	·5068	·1066	·0071	2,398	6,847	85,260	6,342	132	15,990	224	*25·0*
771	Ditto ..	Black clay ..	Alkaline	8·86	1·15	6·65	·006	·064	·14	2·05	1·47	·50	62·70	·0207	·5544	·1027	·0074	2,210	4,940	70,850	17,100	715	19,151	256	*12·5*
	PORT CURTIS—																								
27	Rockhampton ..	Red clayey soil	Acid ..	1·33	3·68	14·70	·023	·392	·45	·55	·38	·02	36·67	·0038	·2140	..	·0011	13,755	15,790	19,300	702	133	7,509	39	..
791	Archer	Black clayey loam	Acid ..	2·24	1·23	3·25	·007	·190	·12	1·64	1·53	·36	73·49	..	..	..	..	5,870	3,708	50,670	11,122	..	..	..	..
792	Ditto	Light-brown clayey loam	Slightly acid	2·42	·42	7·12	·006	·073	·03	1·22	·29	·11	77·93	..	..	..	..	2,147	882	41,490	3,741	..	..	..	..
	BURNETT—																								
28	Nanango	Red loam ..	Acid ..	6·98	3·53	11·62	·015	·230	·04	·28	·29	·10	43·54	·0047	·1455	..	·0019	8,070	1,403	9,823	3,509	165	5,106	67	..
375	Mount Perry ..	Black sandy clay	Alkaline	3·39	1·05	6·55	·007	·123	·04	5·14	·43	·06	62·28	·0019	·2481	..	·0050	4,316	1,404	180,300	2,105	67	8,705	175	*18·75*
376	Ditto	Brown sandy clay	Alkaline	4·08	1·35	7·05	·008	·168	·10	5·08	1·26	·08	58·76	·0037	·2856	..	·0042	5,895	3,509	178,200	2,807	130	10,020	147	*17·18*
	WIDE BAY—																								
205	Montville	Dark-red loam	Strong acid	20·24	3·35	15·31	·009	·370	·32	·32	·47	·06	25·23	·0070	·0844	..	·0129	12,982	11,230	11,230	2,105	246	2,962	453	128·1
235	Maryborough ..	Dark-red loam..	Fairly acid	8·81	1·74	10·99	·008	·157	·08	·32	·14	·13	45·85	·0017	·1211	..	·0055	5,509	2,807	11,230	4,562	60	4,249	193	70·3
356	Bundaberg ..	Red loam ..	V. slightly acid	6·31	1·83	12·17	·009	·230	·29	·38	·17	·06	40·56	·0029	·2072	..	·0087	8,070	10,175	13,360	2,105	102	7,270	305	31·25
357	Ditto ..	Brown loam ..	Acid ..	6·91	1·74	10·90	·011	·207	·20	·37	·14	·02	46·39	·0028	·1389	..	·0037	7,264	7,018	12,980	702	98	4,873	130	52·3
358	Ditto	Light-brown loam	Alkaline	7·72	1·53	12·29	·021	·213	·31	3·31	·28	·09	44·51	·0011	·4785	..	·0080	7,474	10,878	116,140	3,157	39	16,540	281	*32·8*
369	D'Aguilar ..	Dark-grey sandy loam	Strong acid	1·56	1·65	4·86	·007	·190	·06	·40	·22	·09	84·90	·0120	·1960	..	·0127	6,666	2,105	14,034	3,158	420	6,877	446	10·7
383	Bundaberg ..	Red volcanic clayey loam	Slightly acid	5·34	1·57	10·11	·010	·168	·31	·57	·05	·05	40·13	·0023	·2664	..	·0029	5,895	10,878	20,000	1,754	81	9,347	102	*3·8*
384	Ditto	Brownish-red clay	V. slight acid	8·13	1·75	10·78	·007	·201	·40	·60	·27	·18	38·01	·0028	·2695	..	·0155	7,052	14,040	21,050	6,316	98	9,457	544	13·5
385	Ditto	Dark-red loam..	V. slight acid	6·65	1·53	10·37	·009	·190	·27	·46	·08	·11	41·00	·0028	·2072	..	·0121	6,666	9,474	16,140	3,859	98	7,270	424	32·8
398	Ditto	Reddish-brown sandy clay	Acid ..	4·26	1·40	5·12	·010	·090	·06	·34	·15	·04	75·51	·0012	·1392	..	·0124	3,158	2,175	11,930	1,544	42	4,884	435	10·2
399	Ditto	Light-brown sandy clay	Strongly acid	9·40	1·55	·671	·008	·190	·19	·33	·39	·37	62·45	·0032	·0548	..	·0043	6,666	6,491	11,403	12,982	112	1,923	151	154·3
400	Ditto	Light-brown clay	Strongly acid	6·84	1·30	5·22	·010	·263	·11	·43	·54	·59	72·20	·0038	·1776	..	·0047	9,228	3,895	15,086	20,770	133	6,232	165	25
401	Ditto	Light-brown gravelly clay	Strongly acid	4·42	2·52	4·72	·006	·174	·04	·17	·17	·29	71·32	·0014	·0299	..	·0024	6,105	1,544	5,824	10,000	49	1,049	84	159·3
402	Ditto	Black sandy clay	Slight acid	7·44	1·28	7·48	·011	·114	·04	·74	1·30	·13	62·00	·0011	·1365	..	·0014	4,000	1,403	25,960	4,561	39	4,790	49	55·4
403	Ditto	Red sandy clay	Acid ..	3·80	1·45	5·27	·008	·113	·07	·36	·14	·02	75·95	·0010	·1102	..	·0077	3,965	2,456	12,630	702	35	3,867	270	45·3

TABLE I.—ANALYSES OF QUEENSLAND SOILS—*continued.*

Laboratory No.	Locality.	Description of Soils.	Reaction.	TOTAL ELEMENTS IN THE SOIL.										Available Plant Food, Soluble in 1 per cent. Citric Acid.				Total Elements, Lb. per Acre, 12″ deep.				Available Plant Food, Soluble in 1 per cent. Citric Acid. Lb. per Acre, 12″ deep.			Cwt. of Lime required per Acre, 12″ Deep.
				Moisture.	Humus.	Combined Water and Other Organic Matter.	Chlorine.	Nitrogen.	Soluble in Hydrochloric Acid, Sp. Gr. 1·115.																
									Phosphoric Acid.	Lime.	Magnesia.	Potash.	Total Insoluble Matter.	Phosphoric Acid.	Lime.	Magnesia.	Potash.	Nitrogen.	Phosphoric Acid.	Lime.	Potash.	Phosphoric Acid.	Lime.	Potash.	
				%	%	%	%	%	%	%	%	%	%	%	%	%	%	%							
404	Bundaberg ..	Light-brown sandy soil	Slight acid	2·48	1·17	2·91	·018	·110	·04	·23	·09	·02	87·51	·0034	·0482	..	·0043	3,860	1,404	8,070	702	119	1,691	151	..
405	Ditto	ditto ..	Acid ..	1·26	·86	2·40	·013	·081	·03	·16	·12	·02	90·48	·0012	·0431	..	·0048	2,842	1,053	5,614	702	42	1,512	168	31·2
407	Ditto	Brown clay ..	Slight acid	5·74	2·32	8·56	·010	·232	·17	1·08	·98	·65	65·54	·0237	·2710	..	·0191	8,140	5,965	37,900	22,805	832	9,508	670	14·2
408	Ditto	Light-brown clay	Acid ..	2·90	1·18	3·58	·014	·131	·11	·37	·32	·31	81·30	·0022	·1098	..	·0168	4,597	3,860	12,980	10,880	77	3,852	589	9·3
409	Ditto	Black clay ..	Slight acid	11·17	2·15	9·41	·009	·143	·06	1·20	1·75	·08	47·29	·0004	·2240	..	·0046	5,018	2,105	42,105	2,807	14	7,859	161	46·0
410	Ditto	Black clay ..	Neutral ..	10·00	2·00	11·74	·010	·162	·01	1·04	2·08	·06	49·95	·0007	·1880	..	·0040	5,684	456	36,316	1,965	24	6,596	140	40·6
411	Ditto	Brown clay ..	Slightly acid	10·44	2·05	12·07	·011	·103	·07	·58	1·75	·06	46·58	·0007	·0960	..	·0001	3,614	2,421	20,350	2,035	24	3,368	3	81·2
412	Ditto	Black clayey soil	Neutral ..	5·86	1·40	7·46	·010	·081	·03	·70	·93	·06	67·88	·0006	·1373	..	·0012	2,842	1,123	24,560	1,965	21	4,817	42	20·2
466	Montville	Dark-red loam ..	Acid ..	16·96	3·07	13·70	·010	·353	·24	·16	·39	·06	26·80	·0134	·0800	..	·0036	12,389	8,422	5,014	2,105	470	2,807	126	146·8
492	Nambour	Light-brown sandy clay	Acid ..	3·22	2·40	5·90	·014	·207	·12	·44	·45	·21	76·65	·0079	·1429	..	·0085	7,264	4,211	15,440	7,368	277	5,014	298	84·4
498	Bundaberg ..	Yellowish-red clayey loam	Slight acid	5·60	2·30	11·80	·019	·269	·37	·53	·29	·51	38·18	·0055	·2305	..	·0041	7,976	10,970	15,725	15,120	163	6,834	122	11·1
499	Gin Gin	Dark-brown clay	Slight acid	9·44	1·95	9·25	·019	·157	·08	·49	·63	·09	41·93	·0013	·1375	..	·0053	5,210	2,655	17,260	2,967	43	4,563	176	87
500	Ditto	Reddish-brown stony clay	Acid ..	6·02	2·14	11·78	·005	·120	·16	·10	·14	·02	35·37	·0033	·0510	..	·0043	2,311	3,210	1,926	321	64	995	83	106
501	Ditto	Light-grey sand	Acid ..	·96	·52	1·84	·006	·034	·02	·14	·16	·16	93·03	·0007	·0078	..	·0048	1,442	849	5,940	6,790	30	331	203	62·5
516	Gooburrum ..	Grey sandy loam	V. slightly acid	·54	·68	2·15	·009	·079	·02	·49	·07	·06	92·83	·0013	·4560	..	·0035	3,395	860	21,060	2,579	46	19,600	150	28·1
517	Ditto	ditto ..	Strong acid	·36	·70	1·55	·011	·067	·02	·08	·12	·05	93·33	·0014	·0224	..	·0041	3,025	903	3,612	2,258	63	1,000	185	46·9
599	Maryborough ..	Grey sandy soil	Acid ..	·27	·72	1·13	·005	·034	·03	·07	·19	·08	95·44	·0008	·0368	·0132	·0054	1,545	1,363	3,180	3,634	36	1,672	2,453	15·6
600	Ditto	Yellow sandy subsoil	Acid ..	·40	·41	2·79	·008	·028	·02	·08	·16	·11	87·97	·0004	·0151	·0106	·0042	1,066	761	3,046	4,189	15	575	1,599	23·5
607	Tewantin	..	..	1·00	3·30	9·59	·006	·151	·03	·08	·21	·15	88·20	..	..	..	..	5,298	1,053	2,807	5,263	..	..	..	..
611	Bundaberg ..	Red loam ..	Neutral ..	8·94	1·21	12·15	·006	·185	·26	·48	·49	·07	40·80	·0025	·1995	·1230	·0063	5,938	8,410	15,278	2,375	80	6,404	202	12·1

656	Buderim Mountain	Red clay ..	Neutral ..	20·50	2·42	14·84	·023	·324	·14	·32	·19	·08	28·94	·0009	·0714	..	·0165	9,342	4,152	9,284	2,220	26	2,058	476	36·6
657	Ditto	ditto ..	V. slightly acid	16·94	2·62	13·82	·021	·311	·17	·25	·16	·06	31·57	·0042	·1070	..	·0086	10,236	5,727	8,294	1,975	138	3,522	283	40·3
698	Beerburrum ..	Medium sandy soil	Slightly acid	·53	·75	1·45	·005	·038	·01	·05	·04	·03	95·70	·0018	·0246	·0083	·0040	1,551	408	2,041	1,224	73	1,003	163	27
699	Ditto	ditto ..	Slightly acid	·52	·35	1·46	·004	·025	·01	·06	·04	·03	95·56	·0007	·0403	·0164	·0042	1,022	408	2,448	1,224	28	1,633	171	23
798	Kolan River ..	Chocolate-brown sandy clay	Acid ..	·80	·77	3·35	·010	·090	·03	·08	·25	·03	88·62	·0005	·0588	·0166	·0081	3,084	1,028	2,742	1,028	17	2,015	278	23·5
799	Ditto	Light-brown loam	V. slight acid	·76	·60	2·69	·012	·073	·03	·42	·10	·07	86·36	·0007	·0650	·0194	·0039	2,720	1,118	15,650	26,108	26	2,422	145	24
800	Ditto	Grey-brown loam	Slightly acid	·27	·64	1·45	·018	·067	·02	·25	·14	·03	93·07	·0014	·0532	·0088	·0099	2,752	822	10,267	1,232	58	2,185	407	22·5
	MORETON—																								
1	Samford	Grey clayey loam	Acid ..	1·01	·55	10·71	·008	·078	·03	·33	·75	·70	82·06	·0023	·0600	..	·0056	2,737	1,053	11,580	24,560	81	2,105	1,965	39
188	Worongary ..	Dark-red clayey soil	Strong acid	10·84	1·47	6·65	·012	·101	·12	·13	·35	·24	62·51	·0030	·0100	..	0039·	3,544	4,211	4,562	8,422	105	350	137	113·3
189	Ditto	Red clay ..	Acid ..	10·70	·52	8·98	·012	·073	·14	·11	·52	·79	49·68	·0010	·0065	..	·0056	2,561	4,913	3,860	27,720·	35	228	196	135·9
456	Riverview	Brown sandy loam	Acid ..	1·51	1·13	4·97	·019	·140	·15	1·05	·91	·40	77·85	·0196	·1691	..	·0124	4,913	5,264	36,850	14,035	688	5,934	435	19·7
568	Coolangatta ..	Brown clayey loam	Acid ..	6·44	2·85	15·00	·009	·297	·14	·18	·14	·02	15·81	·0016	·0756	..	·0046	9,290	4,380	5,631	626	50	2,365	144	134·3
569	Ditto	Brown loam ..	V. slightly acid	5·92	2·16	14·96	·008	·252	·15	·32	·09	·01	16·25	·0013	·2672	..	·0041	7,883	4,692	10,010	313	41	8,358	128	17·2
667	Moggill	Red sandy clay	Acid ..	7·82	2·90	9·88	·020	·155	·05	·16	·18	·08	58·41	·0037	·0526	·0210	·0170	4,913	1,577	5,049	2,524	116	1,659	536	74
707	Runcorn	Grey sandy soil	Slightly acid	·62	·76	2·34	·005	·067	·01	·05	·03	·02	92·07	·0006	·0286	·0109	·0052	2,460	367	1,836	734	22	1,050	191	42
708	Ditto	Red sandy soil	Slightly acid	1·76	·94	5·42	·007	·078	·02	·23	·06	·02	78·81	·0011	·0560	·0259	·0048	2,695	691	7,946	691	38	1,935	169	55
	DARLING DOWNS—																								
18	Stanthorpe ..	Black sandy loam	Strong acid	1·36	1·58	4·94	·009	·090	·03	·15	·08	·04	90·91	·0015	·0134	..	·0061	3,158	1,053	5,264	1,404	53	470	214	91·4
19	Ditto	ditto ..	Acid ..	1·00	1·33	5·02	·007	·094	·02	·13	·05	·05	88·62	·0018	·0202	..	·0075	3,298	702	4,562	1,755	63	709	263	70·3

Remarks—In the column of lime requirement the figures in italics indicate an *excess of lime.*

TABLE II.—Soil Acidity and Lime Requirement.

Analysis No.	Locality.	Class of Soil.	Reaction.	Humus.	Agricultural Analysis, with Hydroch. Acid 1.1 sp.g.				Spurway's solution in $\frac{N}{5}$ HCl.					Soluble in 1% Citric Acid sol.		Lime Requirement after Hutchinson and McLennan.
					Total Insoluble.	Iron and Alumina, $Fe_2O_3 + Al_2O_3$.	Lime, CaO.	Magnesia, MgO.	Silica, SiO_2.	Iron and Alumina, $Fe_2O_3 + Al_2O_3$.	Lime, CaO.	Magnesia, MgO.	Ratio, CaO ÷ $Fe_2O_3 + Al_2O_3$.	Lime, CaO.	Magnesia, MgO.	
				%	%	%	%	%	%	%	%	%		%	%	Cwt.
399	Albionville	Light brown sandy soil	Strongly acid ..	1·55	62·45	..	·33	·39	·058	·437	·260	·099	1 : 1·68	·0548	..	144
411	Gin Gin	Brown clay	Acid	2·05	46·58	..	·58	1·75	·126	·573	·376	·116	1 : 1·54	·0960	..	81
667	Moggill	Red sandy clayey loam	Acid	2·90	58·41	20·65	·16	·18	..	1·093	·113	..	1 : 9·67	·0526	·0210	74
667	Ditto	ditto	..	..	..	..	..	..	[*	·860	·094	..	1 : 9·17*]	..	..	..
635	Kairi	Chocolate gravelly clayey loam ..	Acid	5·50	65·15	10·74	·47	·16	·082	·490	·420	1·14	1 : 1·17	·2196	·0692	34
664	Gatton	Heavy black alluvial soil	Acid	1·95	62·39	15·48	·94	·74	·253	·557	·706	3·97	1 : 0·79	·1691	·1109	23·4
698	Beerburrum ..	Light brown sandy soil	Slightly acid ..	·75	95·70	1·18	·05	·04	·130	·169	·026	·008	1 : 6·5	·0246	·0083	23
662	Gatton	Heavy black alluvial soil	Slightly acid ..	1·05	71·66	15·20	1·03	·82	·245	·625	·706	·348	1 : 0·88	·1834	·0840	15·6
611	Bundaberg	Red volcanic loam	Neutral	1·21	40·88	35·91	·48	·49	..	·215	·119	..	1 : 1·80	·1995	·1230	13·3
611	Ditto	ditto	..	..	..	..	..	..	[*	·155	·104	..	1 : 1·49*]	..	..	..
633	Kairi	Red volcanic clayey loam	Neutral	2·66	44·01	28·32	·59	·45	·076	·526	·585	·428	1 : 0·90	·2626	·1302	*8* (excess)
637	Ditto	ditto	Neutral	2·53	42·43	30·20	·99	·22	·116	·708	·781	·164	1 : 0·91	·2800	·0260	*10* (excess)
629	Ditto	ditto	Neutral	2·29	41·65	32·98	·56	·74	·097	·572	·481	·365	1 : 1·19	·1983	·0744	*26·5* (excess)
631	Ditto	ditto	Slightly alkaline ..	2·77	37·32	33·18	·91	·24	·079	·522	·829	·236	1 : 0·63	·3621	·1359	*31·3* (excess)
641	Ditto	ditto	Slightly alkaline ..	3·50	40·37	31·22	·78	·21	·099	·626	·644	·194	1 : 0·97	·4480	·1121	*31·3* (excess)
639	Ditto	ditto	Alkaline	4·01	46·65	28·10	1·22	·08	·093	·520	·560	·052	1 : 0·93	·5624	·0612	*42* (excess)

Remark—In all the samples the ratio of soil to $\frac{N}{5}$ acid = 1 : 10, except in the two samples marked *, 1 : 5.

REPORT OF THE ENTOMOLOGIST AND VEGETABLE PATHOLOGIST.

SIR,—I have the honour, with reference to the work of the Division of Entomology and Plant Pathology during the year ending 30th June, 1919, to report as follows :—

The bulk of the work of the office has been, as hitherto, directed to the immediate requirements of the individual agriculturist or pastoralist as well as to those of the other professional officers of the Department ministering to their several interests. It has involved information and advice being tendered personally to visitors to the office and to correspondents submitting specific problems touching the natural enemies and diseases of cultivated plants and, in exceptional instances, of stock also. Visits to applicants, however, have been made whenever it appeared that the inquiry preferred demanded them.

The nature of these problems will appear from the following summaries, that cover for the most part what has formed topic for letters and report in the course of these undertakings, and this only :—

AGRICULTURAL CROPS.

WHEAT.—Wire Worm. Failure of crop through injury to seedlings, Pratten.

MAIZE.—Caterpillars (*Leucania unipunctana*) in numbers, completely destroying young maize, Harrisville.

SUGAR-CANE.—White Ants or Termites, destroying sugar-cane sets when planted, Proserpine ; Scarabæid Grubs, *in re* erroneous opinion that "Meat Works' Fertilizer had an influence in promoting both their presence and injury."

Note.—Sugar-cane Entomology generally comes within the scope of the Bureau of Sugar-cane Experiment Stations.

POTATO.—28-spotted Ladybird (*Epilachna* 28-*punctata*), Ipswich, in thousands ; stripping foliage, Mount Perry, &c. ; Elaterid Beetle, injury, resulting in "Deep Scab" of Tubers, Woombye ; Tuber-gauging Beetle (*Isodon puncticolle*), Wynnum.

Note.—This Scarabæid insect is destructive as an adult, several individuals occurring often associated. Scab, following insect attack, Mackay.

SWEET POTATO.—Hawk Moth Caterpillar (*Chærocampa convolvuli*), defoliating plants in East Moreton districts, in March.

EARTH NUT (*Arachis*).—Pyrale Caterpillar (*Endotricha puncticostalis*, Walker), forming a web in the centre of the leaf-growth, and consuming the young shoots, Redland Bay.

CASTOR OIL.—Capsule "Worm" (*Dichocrocis punctiferalis*, Gn., Pyralidæ), injuring especially the large-fruiting variety "Eureka," Nundah.

COTTON.—Leaf-eating Caterpillar (*Cosmophila xanththindyma*—Noctuidæ), Nundah and Birkdale ; Smaller Boll-worm (*Earias Huegeli*), the same ; Larger Boll-worm (*Dichocrocis punctiferalis*), several localities ; Small Seed Bug (*Oxycarenus luctuosus*), Gladstone ; Cotton Stainer (*Dysdercus sidæ*), Miles, &c. Defoliating Beetle (? *Monolepta rosea*), numerous and injuring leaves, buds, and flowers, Ayr.

CUCURBITACEÆ (Pumpkin, Melon, &c).—Leaf-eating Beetle (*Aulacophora hilaris*), Bomara, Kandanga, Kairi, and other localities, very destructive. 28-spotted Ladybird Beetle (*Epilachna* 28-*punctata*), Sellheim (N.Q.), Goowolba (attacking Rock- but not Water- Melon—F. W. J.).

LUCERNE.—Seed-purloining Ant (*Pheidole* sp.)' Dalby ; Soil-frequenting Insects, Minute Black Cricket, "Wire Worms," and Myriapods, consuming sprouting seeds, Pratten, and probably elsewhere in the Darling Downs district

HORTICULTURAL TRUCK CROPS.

CABBAGE.—(1) Diamond-back Caterpillar (*Plutella cruciferarum*), very prevalent and destructive in Moreton districts ; (2) Mining Worm (*Hellula undalis*—Pyralidæ), Hendra, Veresdale, &c., very harmful to young plants ; (3) Green Caterpillar (*Phytometria chalcites*), Zillmere ; (4) Cut-worm Caterpillar (*Agrotis ypsilon*), the same ; (5) Cabbage Aphis (*Aphis brassicæ*), Brisbane ; (6) Caterpillars (Pale-yellow) unidentified, Evelyn, Herberton District.

TURNIP.—Cabbage "Pests" Nos. (3), (4), and (6), Zillmere ; and No. (6), Evelyn.

BEAN.—Bean Fly (*Agromyza phaseoli*), Brisbane, Mooloolah, Rosewood, and other localities very destructive during autumn ; bodies containing Naphthalene (*e.g.*, Vaporite-Strawson and Fuma) appear to be most potent deterrents.

TOMATO.—Fruit-tunnelling Caterpillar (*Chloridea armigera*), very destructive, Brisbane, Mount Mellum, Beaudesert, and other localities in South Queensland ; Stem Gauging Beetle (*Isodon puncticolle*), Wynnum, Eight-mile Plains, injuring plant beneath soil surface, twelve to fifteen individuals may assail a single one.

VEGETABLES GENERALLY.—(1) Soil-frequenting Wood Louse—*Armadillidum* sp. (Isopod.—Oniscidæ), Geera (Central Queensland). These insects seem to live in the black soil, and just previous to the occurrence of rain come over the ground in tens of millions, eating all plants of every shape and size as they go. (R. M. C.)

(2) Nematode (*Heterodera radicola*). [*s.v.* Root Gall, Vegetable Pathology.]

DECIDUOUS FRUIT TREES.

APPLES.—(1) Codling Moth (*Carpocapsa pomonella*), Stanthorpe district, with apparent increased manifestation that demands concerted action on the part of the growers along recognised methods of control under the direction of the enlightened Horticultural Instructor stationed there. (2) Woolly Aphis (*Schizoneura lanigera*), Toowoomba and Stanthorpe. Growers, in some instances noticing that this insect does not kill its victim [affected trees twenty-five years old occurring in the latter district were reported], overlook its serious effect on crop production. (3) Pernicious or San José Scale Insect, Toowoomba. (4) Root-boring Beetle Grub (Curculionidæ), Stanthorpe district ; not identifiable from material submitted ; said also to attack there Pear

also. (5) Tree Cricket (*Œcanthus* sp.), Toowoomba, injuring the tree by wounding the young wood in ovipositing and by gnawing the fruit. (6) Fruit Fly (*Bactrocera Tryoni*).

PEAR.—(1) Wood-boring Caterpillar (*Xyloryctidæ*), Mount Gravatt. (2) Root-boring Beetle Grub (*vid.* Apple); (3) Fruit Fly (*Bactrocera Tryoni*).

PLUM. — Tussock-moth Caterpillar (*Orgyia postica*), Toowoomba.

PEACH.—(1) False Chinch Bug (*Nysius vinitor*), Aubigny; (2) Fruit Fly, numerous instances; (3) Termites (White Ants), Adavale, Boulia, and Proserpine, very destructive, also injuring other fruit trees; (4) Pernicious Scale Insect, Toowoomba and Tambourine.

[*Note* 1.—The Pernicious Scale Insect is still being distributed on Nursery Stock of local origin, and in some districts occasioning serious injury to deciduous fruit-trees. Fortunately (in view of this fact) it is, in certain places, being controlled by predaceous insects—a small moth caterpillar, in the Murgon district for example, and a rhizobid beetle in the Toowoomba area; the latter already early noticed by the writer having been recently reported by Mr. W. Leslie, who is making it the object of experiment. These checks, however, are only temporary and locally exercised, and do not excuse stricter compliance with the requirements of "*The Diseases in Plants Act of* 1896."]

[*Note* 2.—Great expectations amongst fruit-growers have been cherished by the public announcement of the discovery of a Fruit Fly Lure; but it has not been before this office for the investigation and report ordered, should opportunity be presented. Having learnt, however, that it involved the utilisation of some special Fly Trap or Traps, the object of registered patents, whose manufacture was hindered by technical difficulties, I have pointed out that the "Lure" could be exhibited in combination with a Fly Poison, and thus their employment rendered unnecessary. It is learnt, too, that the Agricultural Chemist's services have been placed at the service of the inventor, whereby—(1) a suitable method of emulsifying the Lure has been discovered, so as to secure its ready distribution in utilising it; (2) a means of preserving this emulsified Lure from decomposition without impairing its efficacy; whilst (3) investigations have proceeded to a certain length for the purpose of discovering the most suitable toxic ingredient to incorporate with it.]

BANANA.—(1) The Banana Weevil (*Cosmopolites sordidus*), Mackay and Tweed River. [*Note.* The occurrence of this serious "banana pest" in the latter district suggests as expedient that, whatever restriction is placed on the issue of banana plants from Queensland plantations already infested with the weevil, it be extended so as to apply to it also.] (2) Grasshoppers, damaging green fruit, Cooroy, (3) Tirocala Caterpillar (*Tirocala plagiata*, Walker—Noctuidæ, s.fam. Hadeninæ), Gympie and Cooroy. This insect, of which isolated examples commonly occur in association with the banana very sporadically in our plantations, manifested itself in very large numbers, and was correspondingly harmful during May-June in the Gympie district. It consumes the green epidermis of the developing fruit and also the tender leaf-tissue of the growing suckers. Unfortunately this occurrence was not referred to this office for inquiry until the time for an adequate investigation had gone by—a circumstance for which the growers were not wholly responsible.

FIG (?).—(1) Boring-beetle Larvæ (*Bostrychus jesuita*, and *Cerambycid*—undetermined), Charleville; (2) Black Mussel Scale (*Hemiberlesia longispina* (Morg.), Leon.), Brisbane; Fig-tree Hopper (*Kyblos* sp.—Jassidæ s.fam. Typhlocibidæ), Sunnybank, apparently introduced; (3) Leaf-eating Beetle (*Galerucella semipullata*), Gympie.

MANGO.—Wood-boring Beetle (undetermined), Sherwood; White Scale Insect (*Chionaspis dilatata*) and Pink Wax Scale Insect (*Ceroplastes rubra*), Brisbane and other localities; Fruit Fly (*Bactrocera Tryoni*), several places.

CUSTARD APPLE.—(1) Mealy Bug (*Pseudococcus* sp.), Redland Bay; (2) Long Soft Scale (*Lecanium longulum*), Norman Park; (3) Black Scale Insect (*Lecanium nigrum*), Wellington Point.

PERSIMMON.—(1) Fruit-gauging Beetle (*Protætia mandarinea*—Fam. Cetonidæ), Brisbane; (2) White Scale Insect (undetermined), Brisbane; (3) Black Scale Insect (*Lecanium oleæ*), Taabinga.

LOQUAT.—Pernicious or San José Scale Insect (*Asp. perniciosus*), Palmwoods.

MULBERRY.—Fruit Bug (? *Nysius vinitor*), Yeulba.

GRAPE VINE.—(1) Leaf-eating Beetle (*Monolepta rosea*), Brisbane; (2) Long Soft Scale (*Lecanium longulum*), Norman Park; (3) Termites (White Ants), Adavale.

PASSION VINE.—Red Spider (undetermined), Brisbane and South Brisbane; very destructive.

STRAWBERRY.—Red Spider (*Tetranychus* sp.), Deagon, Sandgate.

PINEAPPLE.—Root-destroying Scarabæid Grub (undetermined), Redland Bay. These soil-frequenting insects were exceptionally numerous and harmful during October, 1918. Fortunately the growers had already adopted thorough control measures in coping with them prior to complaint being made.

CITRACEOUS PLANTS.—(1) Leaf-eating Caterpillars (*Papilio anactus* and *P. ormenus*), Barcaldine, Pentland, and other places. (2) Green Horn Bug (*Biporulus bibax*), Toowoomba, Tallwood, and Roma districts. Exceptionally harmful, especially in the latter locality. A local observer there (J. R. S.) stated that they arrived on his trees in hundreds after night-fall and withstood every method of control that he subjected them to; so perpetrating much damage. (3) Bronze Orange Bug (*Oncoscelis sulciventris*), Toowoomba and elsewhere. (4) Beetle Grub Borers (unidentified), Roma and Maryborough. (5) Beetle Grub Root Borer (unidentified), Degilbo. (6) Beetle Grub Root Borer (? *P. oropterus* sp.—Curculionidæ), Blackall Ranges; very destructive to the larger roots of orange-trees during the prevalence of dry soil conditions; under other circumstances the plant is able to recuperate by the production of wound-callus, the injury being confined to the cortex, and the tunnels constituting this injury

being gradually filled in by it ; the beetle's habits are such as to permit of its ready capture in numbers. (7) Termites (White Ants), Boulia. (8) Fruit Fly Maggot, Mapleton. (9) Skin-mining Caterpillar (*Dichocrocis punctiferalis*), Blackall Ranges. (10) Soft Scale Insect (*Lecanium hesperidum*), Mount Larcombe, Inglewood, Toowoomba, &c. (11) Red Scale Insect (*Aspidiotus aurantii*), several localities, in Western district and elsewhere. [*Note.*—The citrus " pests " Nos. (10) and (11) are almost exclusively the scale insects that arrive on citrus nursery stock from the Southern States.] (12) White Circular Scale Insect (*Aspidiotus hederæ*), Roma. (13) White Wax Scale Insect. (*Ceroplastes cerifera*), Toowoomba. (14) White Scale Insect (*Chionaspis citri*), Toowoomba, Burnett, &c. (15) Pink Wax Scale Insect (*Ceroplastes rubra*), several localities. [*Note.*—This insect is becoming much less prevalent than formerly in he Moreton area.]

ORNAMENTAL PLANTS.

PRIVET (*Ligustrum* sp.).—Black Mussel Scale Insect (*Hemiberlesia longispina*, Leon.), Maryborough.

ROSE.—Tumourous Root-growths, associated with the presence of an acarus (*Rhizoglyphus* sp.), Brisbane.

FLAME TREE (*Sterculia acerifolia*), Leaf-eating Caterpillar (*Notarcha clytalis*), Brisbane.

QUEENSLAND NUT (*Macadamia ternifolia*).—Fruit-boring Caterpillar (*Arctiophora ombrodetta* Lower-Tortricidæ), Hendra.

FIG (Moreton Bay—*Ficus macrophylla*).—Leaf Hopper (*Psylla fici*), Brisbane.

DURANTA.—White Wax Scale Insect (*Ceroplastes cerifera*), Brisbane, very addicted to consorting with this plant.

DAHLIA.—Pink-banded Galeruca Beetle (*Monolepta rosea*), Brisbane, attacking this amongst numerous other garden plants, including Rose, &c.

IRIS (Japanese).—Aphis, Brisbane.

BEGONIA.—Leaf-eating Caterpillars (*Artaxa lutea* and *Syntomus* sp.), Brisbane.

BALSAMS, ETC.—Pulvinaria Scale Insect, Brisbane.

CRINUM AND AMARYLLIS.—Stem-tunnelling Caterpillars (*Brithys crini*, Fabr., and *Calogramma festiva*), Brisbane.

STOCK (*Matthiola*).—Cabbage Diamond Moth Caterpillar (*Plutella cruciferarum*), Brisbane.

BEAN-BROAD (Faba) ; Flower-damaging Beetle (Nitidulidæ), Brisbane, reported as cause of infertility through damaging the anthers.

FORESTRY ENTOMOLOGY.

RED CEDAR (*Cedrella Toona*).—Mining Caterpillar of young growth (*Hypsiphylla robusta*). This moth, that is so destructive in nurseries in Queensland, I have pronounced as identical with an Indian denizen. In India a natural method of controlling it has been devised that possibly may be made available here. In Java, too, it occurs ; thus at Buitenzorg it is injuriously related not only to the Red Cedar, but also to *C. febrifuga, Swietenia macrophylla,* and *S. mahogani* (Beckman *in. lit.*)

WHITE CEDAR (*Melia decomposita*).—Defoliating Caterpillar (*Teara tephrotis*—Bombycidæ), Hughenden and other localities.

BRIGALOW (*Acacia harpophylla*).—Cerambycid Beetle Borer (unidentified), Toowoomba.

ELM (*Ulmus*, introduced).—Cerambycid Beetle Borer, Warwick, causing " die back " in this popular shade tree.

HOOP PINE (*Araucaria Cunninghami*).—(1) Seed-damaging Caterpillar (? Tineidæ), Frazer Island ; (2) Powder Post Beetle (*Anobium* sp.), very destructive to sawn timber in houses, Brisbane.

GENERAL.—Termites or " White Ants." Steps have been taken to further identify the Queensland species of this important group of economic insects, to elucidate their feeding and other obscure habits, and to define their present distribution in the State.

[*Note.*—The Forestry Division of the Department of Lands has made less frequent resort to this office than in past years.]

VETERINARY ENTOMOLOGY AND BIOLOGY.

CATTLE.—(1) Red-water Cattle Tick (*Boophilus annulatus australis*), Dalby ; (2) Papuan Tick (?) (*Hæmaphysalis papuana*, Thor. ?), Dalby ; (3) Giant Tick (*Amblyomma* sp.), Chinchilla and Bluff Downs ; (4) Fly associated with Ticks—dead (Phoridæ), Eumundi ; (5) Lung Worm (*Dictyocaulus viviparus*, Bl., syn. *Strongylus micrurus*), loc. ? ; (6) Intestinal Worm (*Œsophagostomum inflatum*, Schn.), Beaudesert, seriously affecting young cattle ; (7) Verminous Worm Nodules (*Onchocerca gibsoni*), Brisbane ; (8) *Paraamphistoma cervi*, Yengowie ; (9) " Pink Nose" (cattle sickness, due to feeding on *Lantana camara*), St. Lawrence ; (10) " Caterpillars " (the larvæ of the saw fly (*Pterygophorus uniformis*), reputed as poisonous to stock, Roma district.

HORSE.—(1) Red-Water Cattle Tick (*Boophilus annulatus australis*), Warwick and Wallangarra ; (2) Horse Bot Fly (*Gastrophilus nasalis*), Greenmount, Goombungee, Stanthorpe, as instances of its further extension ; (3) Leeches (Gnathobdellidæ) Pimpama Island. In this case cows, affected by mammitis, were being milked for special purposes, and in two instances a leech passed out from a teat together with some sanguineous fluid on it being squeezed. The cattle had been running in swampy country. (Vet. Surgeon A. McGown.]

SHEEP.—(1) Nasal Fly (*Œstrus ovis*), Dalby and Springsure ; (2) Sheep Blow Fly, erroneous identification ; *Rutilia inornata* (Dexidæ), a useful parasitic fly ; and *Ophyra analis,* a carrion fly.

[*Note.*—The Sheep Blow Fly problem is now delegated to a Special Board of Inquiry connected with the Bureau of Science and Industry (Commonwealth) that sits in Brisbane].; (3) Nodule Worm (*Œsophagostoma columbianum*), Roma ; (4) Nasal Fly (*Œstrus ovis*), Emerald, as an instance of its further extension (c.f. earlier Annual Reports).

PIG.—Kidney Worm (*Sclerostoma pinguicola*), presence followed by death, Warren.

Dog.—(1) Dog Tick (*Rhipicephalus sanguineus*), Brisbane and Buckingham Downs. [*Note.*—The continuously extending distribution of this dog-parasite, favoured by the special habit of the ixodid of dropping from its host, at each moult, and attaching itself afresh to a further host (not necessarily a dog, since cattle will serve it in this connection), should not be regarded with indifference. This is so, since *R. sanguineus* has been found to be an intermediate host of *Piroplasma* (*Babesia*) *canis* of malignant jaundice; and, accordingly, should a dog or dogs arrive and be domiciled here with this parasite of the sickness in their blood—that is an incident that, under present circumstances surrounding the importation of dogs, might readily occur—we have all the conditions conducive to the propagation of a serious dog affection that might have a far-reaching influence on the stock-raising enterprises in which the services of dogs (sheep or cattle) are so material; in fact, the wide occurrence in the State of this special Tick renders it imperative that no dog should be introduced thereto—at least from overseas—without the safeguard that a thorough microscopical examination of its blood would constitute.] (2) Intestinal Parasite (*Ascaris* (?) *marginata*), Brisbane. (3) Dingo poisoning; the employment of cyanide of potassium or sodium as an alternate method to replace the use of strychnine salts.

Aquatic Animal Life.—The increased interest in stock entozoa, due to the high economic and scientific importance that—as the widely recognised parasitologist in our midst, Professor Harvey Johnston, M.A., D.Sc. teaches us—surrounds them, has led to increasing attention being bestowed on the sources whence they may possibly be acquired. Hence forms of aquatic life are frequently being submitted to the office for the purpose of identification and that their significance in this relation, if any, may be pointed out. In this connection may be mentioned during 1918-19—(1) Gordian Worms from Brisbane, Cooran, and other localities; (2) Aquatic Leeches from Adavale; and (3) Chironomous Larvæ (Diptera) from Yandilla, occurring in countless numbers in dams and water troughs.

Poultry.—(1) Fowl Tick (*Argas persica*), Townsville. (2) Fowl-fatality after consuming leaves of *Petalostigma quadriloculare*—Euphorbiaceæ. (3) Fowl-fatality after eating the fruit of *Solanum seaforthianum*, the seeds being found to contain solanine; Brisbane. (4) Facial Warts, Brisbane. [*Note.*—This fowl malady is considered locally to be occasioned by mosquito bites. It is also stated that residents are wont accordingly to cease breeding fowls about November, when these insects commence to become prevalent. There are some grounds for concluding that it may prove to be of bacterial origin and to yield to a form of protective inoculation, as in other affections of the kind.]

Marsupials.—Tasman's Tick (*Ixodes tasmani*) on Opossums, Boyne River. This tick is often submitted, on the erroneous understanding that it is the Red Water Cattle Tick, and thus the animal named is wrongly regarded as one of its disseminators.

Iguana (*Monitor* spp.)—A commercial value having been found for these reptiles, that are not without their use in destroying reptiles and sheep-maggot producing carrion, we have urged that steps be taken to prevent their local extermination; their habit of capturing birds not having meanwhile been lost sight of.

Stock Foods.—The growing use of manufactured Stock Foods, and the possibility of their being rendered more or less toxic by accidental inclusions, that are not ordinarily determined in chemical analysis—*e.g.*, those of fungus-origin, found illustration in a package of Brisbane origin submitted, and that was rich in the spores of the Smut Fungus (*Tilletia tritici* (Bjerk), Wint.) and of plantlet-rootlets; indicating that smutty germinated grain had been used in compounding it.

Household Insects.—(1) Mosquitoes and Fleas; several references to the office for information bearing on these.

(2) Pruritus, due to "insect-irritation," Brisbane. Examples of *Clothilla* (*Neuroptera*) and *Dermanyssus* (Acarina) being nominally inculpated, but the latter mite being probably the delinquent.

(3) Holaspis Mite, associated with common House Fly (*Musca domestica*); the latter, however, merely a passive carrier; Jundah, Longreach.

(4) Beetle Larvæ (*Anthrenus scrophulariæ*), attacking woollen clothes; two instances, Brisbane.

(5) Ants (*Iridomyrmex purpurascens* and *Camponotus novæ-hollandiæ*). Several complaints respecting the presence of the former ant in gardens and in proximity of dwellings were received. In all cases poisoning with a solution of potassium or sodium cyanide has proved effective. The latter, a more domestic species, a Maryborough correspondent has commented on.

Bees.—Apart from matters concerning Apiculture that are outside the scope of the office, the Bee has claimed some attention from another standpoint: that of bee-enemies.

Bee Robber Flies.—*Asilus rufiventris*, Macq., and *Blepharotes flavus*, Ricardo—Fam. Asilidæ, whose predatory action—that of the former especially—was brought under notice by a Caloundra correspondent.

Reduvid Bug (*Pristesanchus papuensis*). Attacking individual bees and quickly paralysing them on the insertion of its long penetrant proboscis, as shown by interesting experiments conducted by Mr. H. Jarvis.

Foraging Ants (*Iridomyrmex purpurascens*), Eagle Junction. In this instance the beehives had been placed at no great distance from large communities (nests) of this member of the Formicidæ, and were observed to pounce on individual bees that dropped.

Green Tree Ant (*Œcophylla smaragdina*).—This is also a predatory ant on the Honey Bee; it is, too, troublesome as giving annoyance to fruit-pickers, whom it aggressively attacks when they come in contact with its leafy nests amid the branches of citrus trees. Instances of this were referred to us from Chump Point.

Beehive-frequenting Beetle (*Protœtia mandarinea*—Fam. Cetonidæ).—The very interesting habit on the part of these beetles, that generally affect sweet things (ripe figs, persimmons, or pears)—of entering within bee-hives, and, after

repairing to the comb, gorging themselves with honey, and then issuing forth again—was brought under our notice by a correspondent (H. J.) who earlier recorded the fact in an entomological periodical.

USEFUL INSECTS.

LANTANA FLY (*Agromyza* sp.).—In the Annual Report of this office for 1910-11, under the heading "Useful Insects—2 Lantana destroying Insects," reference was made to "A Memorandum [dated September, 1910—"Insects for checking growth or dissemination of Lantana"] dealing with the possibility of preventing the dissemination of this weed, by utilising the insects known to subsist upon it, based on information received from the Hawaiian Islands," adding: "It is for the Department to consider if the time be not ripe for action in the direction referred to" (*vid.* Ann. Rep. Dep. Agr. & Stk., 1910-11, p. 74).

In our Annual Report for 1917-18, certain action following on this proposal is described, viz.:—(1) Personal inquiry at Honolulu in March-April, 1914, on the part of the Writer, and his obtainment there of the Lantana Seed Fly Agromyza, its importation by him to Queensland in April of that year, and its subsequent liberation, on Lantana, in the neighbourhood of Brisbane. (2) A visit under our orders and instruction, of Mr. Hubert Jarvis, Technical Assistant (*a*) to Honolulu 2nd to 21st February, 1917, and (*b*) to Fiji, with the result that he obtained and transported to Queensland a still larger number of the same Lantana insect from both localities. Also, that these flies, isolated from parasites checking their numerical increase, were distributed—in March, 1917—between Toowong, South Brisbane, Sandgate, Mooloolah, Mackay, Mulgrave River, and Cairns in the course of personal visits by the officer named was recorded.

It was also set forth in the Report that, as the outcome of this action, the Lantana Seed Fly had already become established both in the Brisbane and Cairns areas.

Further, it was stated, as had been also affirmed regarding the earlier importation, that apparently the flies liberated in the Moreton area had not finally become naturalised there, dry cold weather locally killing their host-plant.

However, subsequent observations in May, 1918, proved that the local disappearance of the insect had not obtained; a check on its numbers only having been experienced.

Meanwhile, in January, 1918, the Cairns Press stated that, as the result of its establishment in the district, the Lantana Fly occurred all over the Smithfield district, and was being taken in infected Lantana berries to other localities where the weed grew.

With the arrival of spring, further inquiries were instituted by circular letter; and wherever the Lantana was in flower and a colony of the insect was asked for, the same was dispatched with full directions as to the method of procedure to be adopted, in order to secure its local establishment.

In our earlier undertakings the living flies themselves were transported—a work demanding sedulous care and skill. This was to eliminate all chances of the distribution of associated parasites. When, however, once the insect was well established with this controlling influence on its increase eliminated, the maggot-infested fruit and stalk-heads were alone transmitted.

This latter method of distribution was, too recommended for adoption to those, who receiving material from this office were desirous of transmitting the Lantana Fly further afield. Amongst those especially active in this direction were the former Minister of Agriculture—the Hon. W. Paget, of Mooloolah—who had early advocated the method of controlling Lantana by aid of its injurious insects ("Methode Koebele") and J. G. Hales, Esq., of Rosedale.

The outcome of this Departmental activity, in which the Writer and his assistant (Mr. H. Jarvis) have been called upon to take part, is that the Agromyza Fly is now established throughout an immense area of country, occupied locally with *Lantana camara*, extending from the Mossman River, or even further North, to the Tweed River in the South, and apparently through coastal New South Wales to Sydney. It has also been sent to some of the islands lying near the coast at Gladstone with results, however, not yet to hand. It may not, however, yet occur everywhere within this area; but to where lacking and in demand, colonies will be sent. True, the insects possess great powers both of increase and of spontaneous dissemination and may be expected to traverse the areas separating individual patches of Lantana that have been traversed by the birds responsible for their presence.

Where this Agromyza Fly has been found or placed in association with the Lantana, it is reported that the fruit attacked fails to produce fertile seed; a remark that applies to every country where the two thus co-exist. The fruit even does not, or very rarely, ripen; and so escapes the attention of frugivorous birds. This is the sole effect upon the plant produced. Those, therefore, that are inclined to cherish the plant as a honey-yielding one, or for soilage purposes (cover crop), are still—notwithstanding its presence—in a position to do so; but they in giving effect to this inclination will now be debarred to a very considerable extent from furnishing Lantana seed for stocking the holdings of those to whom the notorious weed in question is regarded as a curse (or "awful pest," as a northern municipality terms it).

Those competent to express an opinion have stated that the Lantana, up till now, has been ruining our coastal pastoral lands, and as a noxious weed is second only to prickly-pear—the word "noxious" being used advisedly, since feeding experiments and grazing experience have alike shown that it is capable of fatally affecting stock.

Referring to a single area—the Rosedale Mineral Field (Gladstone district)—the Geological Surveyor (L. C. Ball, F.G.S.) writes as follows:—"The Lantana thicket on the north-western portion of the Rosedale Mineral Field has a maximum length of three miles measured on a north-east and south-west line, by a maximum width of two miles on a north-west and south-west line. The plant has spread out [also] not only over the Mineral Reserve [to the extent described] but over the adjoining Grazing Farm 132, Rosedale; [and] parts of the thicket are so dense as to be almost impenetrable by man or beast. Unchecked, there was a possibility that the Lantana would spread over the greater part of the mineral field, but the seed-destroying fly Agromyza has recently been introduced . . . . . and its sterilising effect is already strongly in

evidence. In the whole of my traverses across the Lantana thicket I saw very few unaffected Lantana berries, while on every hand shrivelled-up affected fruit was observed . . . The selectors are unanimous in their verdict as to the capacity of Agromyza to check the spread of Lantana" (L. C. B., 13 June, 1919). Testimonies to like effect have been received from other districts also.

Whilst this work was being accomplished in Queensland, visitors from the mother State were instituting local inquiries as to the status of the Lantana Fly here. The Richmond District Branch of the Primary Producers' Union, amongst other bodies, sought information. To satisfy these applications a short Memorandum—"The Lantana Fly"—was written. This the latter body reproduced in the form of a printed leaflet that was issued to each of its 53 branches as well as to the local Richmond River Press.

This office, however, was aware that the Government Entomologist of New South Wales had written in 1907 :—"Whatever may be said in favour of introducing insect parasites to destroy injurious insects, nothing, even if successful, can be said in favour of knowingly introducing plant-eating insects and their larvæ, for no one can tell what such insects do when their food plant is finished." It was, therefore, not wholly unprepared for his further opinion, expressed in this New South Wales official utterance of 5th November, 1918 :—"The importing of the Lantana Fly from Hawaii into Queensland . . . . is considered by the Entomologist of this Department to be a serious matter, owing to the fact that in New South Wales large quantities of berries, such as strawberries, raspberries, cherries, &c., are grown ; and there is no guarantee that this berry destroying fly will not damage these small fruits and cause considerable losses."

This objection I have already dealt with It has had the effect of my employing every effort to prevent the Lantana Fly being sent or conveyed beyond the Tweed River, notwithstanding strong evidence of a desire on the part of New South Wales settlers to receive it ; but, since it has already been discovered in the vicinity of Sydney (F. Muir), my endeavours have been resultless. Meanwhile it may be confidently expected that it will accomplish as good work in New South Wales as in Queensland, Fiji, New Caledonia, the Hawaiian Islands, and Mexico, and also, as in them, no harm. We find, in fact, as far as Queensland is concerned, that it is so exclusive a parasite that it will not attack a second species of Lantana blossoming and fruiting within a few yards from the one it is so closely and injuriously related to. In fact, it is, in this respect, like the Wild Cochineal Insect so destructive to the Prickly-pear (*Opuntia monocantha*), but that will not feed upon the other kinds naturalised in Queensland—an insect also whose introduction is the outcome of both our suggestion and undertaking.

AGRICULTURAL BIOLOGY.

I. Mammals.

Rats.—(1) Preliminary investigations regarding the Rats occasioning great loss in our Northern cane fields—the Mossman area especially—have been entered upon.

(2) A vegetable-feeding rat, very partial to the younger wood of growing Bougainvillea, in South Brisbane and Toowong, has been identified for us by the Director of the Queensland Museum—Heber Longman—as the white-bellied variety of *Epimys rattus*.

(3) Rats (unidentified) invading houses from the surrounding country, Mossman and Ormiston.

(4) Rats harmful in poultry yard, Brisbane.

Mice.—(1) Occurring in large numbers at Kingurri, North Queensland, during August, 1918 ; reported there as "doing terrible harm" and damaging clothes and linen in addition to their ordinary depredations.

(2) The same, and destroying potatoes in the ground, Cooktown, North Queensland, during August, 1918, also.

Rat Kangaroo (*Bettongia penicillata*), Mundubbera, &c. Especially destructive amongst other roots to growing sweet potatoes. Methods for successful destruction of this are commonly sought.

Bandicoots (*Perameles*).—The ordinary Long-nosed Bandicoot is a very useful marsupial by reason of its decided insectivorous habits, being very partial to soil-frequenting insects—cane grubs, wire worms, &c. The short-nosed species *Chœropus* spp. have, however, the reputation of being equally harmful with the Rat Kangaroo ; and its depredations have occasioned resort to this office for methods of control from districts as remote as Nambour and Bloomfield River.

Wallabies (*Halmaturus* sp.).—An instance of "Scrub Wallabies" injuring young citrus plants, by not only defoliating but also barking them, was brought under notice by a Tambourine correspondent.

Opossums (*Trichosurus vulpecula*).—The open season for the shooting of the Common Opossum in the interest of the fur trade has resulted in its being shot in Southern Queensland during June, when the animal is carrying its young. It has been reported that thousands of young animals have been thus destroyed, especially in the Beaudesert area. The incident has suggested the creation of large game reserves, to meet this difficulty as well as for preserving generally our interesting but fast-disappearing marsupial animals.

II. Birds.

The office, as in the past, has been called upon to address itself to the subject of Birds in two relations—(1) towards our crops and flocks as useful agents ; and (2) as agents whose presence is fraught with more or less damage, or even destructiveness ; and in these relations it has had to consider both native and naturalised birds and also birds whose naturalisation is proposed.

Native Birds Protection Acts.—The Department has projected a new legislative measure, having for its end the consolidation of the several existing Acts, covering the protection of Birds as well as of other animals, whilst at the same time incorporating additional provisions that past experience has taught are necessary for the more effectual carrying out of their main proposals. In this measure our own views find more or less full expression, and it is interesting to add, as of special significance, that a representative

deputation of Bird Lovers, that waited on the Minister with regard to the matter the subject of this very project—*i.e.*, further Native Birds Protection—not only endorsed its main propositions, but also proposed additional safeguards, as supplementary to them. Other important public business, however, operated to prevent the Bill in question from being added to our Statutes.

A series of wall-cases, prepared by Mr. H. Jarvis—illustrating in detail the insectivorous feeding-habits of a large number of our Native Birds—was exhibited at the Annual Show (August, 1918) of the Queensland National Association, and proved of great educational value in educating the public as to the special claims of our feathered friends on their consideration.

Illustrated lectures were also given at two of our larger Metropolitan schools—both to boys and to girls—on Bird Day (25th October, 1918) with the title " Our Birds : Why should we love them?" that were well received, and that, as in the case of former addresses, should bear fruit.

In my capacity of President of the Queensland Gould League of Bird Lovers, I had hoped to be able to accomplish much greater and more widely extended work in the same direction.

The devastating cyclone that visited tropical Coastal Queensland with such destructive influence on 20th and 21st January, 1918, was not without its severe effects on bird life. With full consideration of the situation, and what it demanded, the Royal Australian Ornithologists' Union (of which we are a member) proposed a " close season " for birds for two years, covering the districts from Mackay to Innisfail, inclusive.

The greatest enemy to our native birds—one that seems to be lost sight of—is the " bush fire" that may extend continuously, for miles and miles, through country that many of the more useful ones frequent for nesting purposes. Not only are thus the ground-loving species, with their young or eggs, burnt or smothered in their nests, but with a " good burn " [how fateful for them !] smoke, heat, and flame reach those whose resort may be even the tree-tops themselves. True, the bush fires account for the reduction of " vermin and rubbish " (allusion is not made here to burning-off fallen scrub), and they create the opportunity for much succulent herbage to shoot up ; but there is reason to conclude that many of the finer grasses succumb to the repeated action of the firestick, whilst the bush fires aid in destroying much of the surface humus—so difficult in a semi-tropical country to restore—on which the growth of pasturage generally of the better kind is dependent. This general conclusion, however, may be gainsaid ; but the destruction of birds in this way is a fact that any close observation will substantiate.

The usefulness of birds, by reason of their insectivorous habits, is not commonly impressed by correspondents upon the office, since its special business is to redress obvious grievances personally experienced. A schoolboy from Buderim Mountain wrote to emphasise the services of the Magpie Lark or " Pee Wee" in consuming the Green Aphis of the turnip field ; a school girl, residing at Toowoomba, expressed her inability to understand why the Blackall Range fruit-growers made such onslaught on the Silver Eye (the " Blight Bird" of New Zealand) [" I was horrified at the numbers destroyed there by farmers " she stated], as she herself had learnt to regard it as an insect-eater generally. Other instances of this attitude of our youth might be recorded. Of course, the latter bird is locally, and during certain seasons, harmful. Thus, a Gympie correspondent complained at the same time that, together with the Green Oriole, it was making havoc amongst his figs. Obviously often it is a matter of balancing Merits with Demerits.

The Blue Bald Coot or Red Bill (*Porphyrio melanotus*). This bird has until recently been the object of the " close season " provision ; but lately in the Mackay district, where it has been found to be harmful to young sugar-cane, not only has this protection, in response to the application of local residents, been removed, but the " Mackay Districts Flying Fox Destruction Board " desired to constitute it a pest under " *The Local Authorities Acts*, 1902-1917," and to, moreover, offer a bonus of 6d. per head for its destruction. This office felt it incumbent upon it to set forth the case for the defence of this bird, in February last.

The Rainbow Bird or Bee Eater (*Merops ornatus*). In December, 1918, the Queensland Bee-keepers' Association submitted a proposal that the protection accorded this bird under the Native Birds Protection Act be removed. In the interest of one of the gayest liveried of our feathered friends, we have dissented from this proposal. This beautiful bird is a Queensland summer visitant, only coming here to breed ; and, as it is to be shot with facility, any license to kill it would soon much reduce its numbers. It is strictly insectivorous, but its taste for bees is not commonly and persistently exercised, feeding generally, as it does, on beetles, Neuroptera, and winged ants. Where hives are few, and swarms weak, or where there is a decline in bee-strength, owing to a bad season, as was experienced in 1898 by apiarists here, its habit of capturing bees is noticed, and loss of bees is to an undue extent attributed to the bird ; but, under other circumstances, its bee-feeding habit has little or no influence on reducing the numbers of bees. Its occasional weakness for these insects had always been remarked here, notwithstanding no such proposal as that in question had earlier reached us. And, unfortunately, it is now accompanied by one of like nature, emanating from another quarter, for slaughtering this gem amongst insectivorous birds, in the interests of the millinery trade seeking still another plume—cost to bird-life what it will.

The Talegalla or Scrub Turkey (*Catheturus lathami*). The fact of the dissemination of the seeds of Prickly-pear (*Opuntia* spp.), by frugivorous or partly frugivorous birds, has—notwithstanding any feature they may exhibit that is on the other hand, commendable—been deemed sufficient ground for urging their wholesale destruction ; often, it is feared, being done, too, by those who take no steps whatsoever to control or subdue the local development of the notorious weed whence this distribution proceeds. The Scrub Turkey, one of the few Megapode birds that exist, has received especial attention in this connection. We have pointed out that, in order to inculpate it, two facts have to be established :—(1) Its feeding on the fruit and seeds of the plant it is charged with disseminating ; and (2) its rejecting these seeds in a viable condition that becomes manifest in future prickly-pear growth. The former point is settled, in opposition to the birds' claims for preservation, by the completest evidence of

observation and experience; but regarding the latter some doubt is still entertainable—in fact, experiments carried out by the Agricultural Instructor of the Central Division (Mr. G. B. Brooks) tend to indicate that in passing through the Scrub Turkey's system prickly-pear seeds are subjected to such action that they can no longer germinate. The results, derived from these investigations, do not appear to us to be quite conclusive in settling the question. However, we would point out how really important it is; for if the prickly-pear seed, on being rejected by the Scrub Turkey, has lost its germinating power, the bird, *ipso facto*, not only does not serve to propagate the pest, but, on the other hand, to the extent that it feeds on its fruit and seeds, actually prevents this, and in so doing demands protection and full scope for its activities.

"Scrub Magpie," or "Black Magpie" (*Strepera graculina*—Corvidæ). This bird of many useful propensities, including the exercise of a noteworthy insectivorous habit, is again condemned as a prickly-pear disseminator without question in its case. A special Memorandum, covering the feeding habit of this and related members of the Crow Tribe (for the *Streperas* are not Magpies), was prepared for the information and guidance of the "South Coast Crows and Flying Fox Destruction Boards"; but, being evidently impressed by the more obvious indirectly harmful habits of the bird, rather than by the more predominant and directly useful ones, they have decided that the "Scrub Magpie" is a bird that should, if possible, be exterminated.

The Plain Turkey (*Eupodotis australis*). This bird, also known as the Australian Bustard, has been reported to be again a notorious propagator of the prickly-pear by distributing its seeds; but no mention has been made of its eminent service in consuming vast numbers of grasshoppers and even larger "vermin."

Naturalised Birds—Sparrows and Starlings, The lesson given by the Writer at the Agricultural Conference held in Toowoomba, in 1907—whereat a paper, entitled "Birds—Importations effected or proposed" was read, although its publication was declined—is at length bearing some fruit, but only when Sparrows and Starlings—against whose introduction and increase emphatic warning was pronounced—have spread locally in great number throughout much of Southern Queensland. Already local bodies are endeavouring to stem the tide of their onward march; but the Sparrow has meanwhile become well established on the Darling Downs, and the Starling has found its way to Inglewood on its way to the cherry orchards of Stanthorpe. At length the South Coast Crows and Flying Fox Destruction Boards have announced the grant of the following bonuses:—Sparrows, 1d. per head; sparrows' eggs, ½d. each; starlings, 3d. per head; starlings' eggs, 1d. each. They have also published descriptions of these birds and their eggs that this office has furnished them with. Information has also been given to correspondence regarding measures for poisoning Sparrows and for protecting seedling-plants from their attacks.

King Parrot (*Aprosmictus cyanopygius*) and Red Shoulder Parrot (*Ptistes*). A proposal has been submitted having for its end the immediate total protection, under the Native Birds Protection Acts, of these birds—a proposal that is especially aimed at rendering both the trapping and the keeping in confinement of them alike illegal, in consideration of the alleged facts that both are threatened with extinction by trappers, and that the latter is almost confined to Queensland and is an insectivorous bird; the case of certain Australian Ground Parrots, either extinct or nearly so, being instanced as to what will happen in default of such procedure. In consideration, however, that the King Parrot is known to be harmful to certain crops (*e.g.*, maize, potatoes), the proposal included the strange proviso that, notwithstanding the "total protection," it might be shot in order to safeguard these crops by those interested in them.

The following considerations have been advanced in opposition to this proposal:—(1) Both birds are still plentiful within the wide range of their occurrence, the Red Shoulder Parrot or Red Wing Parrot (*Ptistes*) being by no means a Queensland bird only, but met with, in a sub-coastal belt, from New South Wales to North-West Australia, inclusive; and that this remark applies even to the districts especially in which trapping is carried on. (2) That the insectivorous habit of the Red Shoulder Parrot, mentioned by Gould, is only casually exercised, as is done by almost every bird, especially during the breeding season. (3) That the Australian parrots that are extinct or almost extinct are not birds that have been trapped in the past, and that their present scarcity or absence is otherwise to be accounted for. (4) That Parrots—including the two the subject of the proposal—are proverbial for their tolerance of confinement in cages and aviaries, attaining often remarkable longevity under this circumstance; and this, therefore, and the capture that it involves, does not make for extinction. (5) That when no longer captured, tamed, and confined, opportunities for study, admiration, and wonder would be denied to many who could not find, in many cases, opportunity for this, with these birds at large—for they avoid the vicinity of towns and settlements or nearly so to the same extent even, under this proposed protection as when existing under the harmless restraint alluded to.

Exotic Birds:—Proposed Introduction—(1) *Rats*: In order to control the rat plague so serious in our Northern sugar-cane plantations—those of the Mossman area especially—a proposal has been made to take steps to cause Australian species of Owls to congregate there, as well as to import rodent-capturing species from the United States, in order to supplement the efforts of our own birds in rat destruction. In a lengthy Memorandum, submitted in September, 1918, grounds were set forth that tended to show that this proposal was in one respect impracticable, and that with regard to the other it was not likely to be attended by practical results in securing the end in view.

The Same.—(2) *Ticks*: A former resident of Brisbane—a technical chemist, the late Leon Hermann—several years since suggested inquiry regarding the cattle-tick-eating habits of a special *Aigrette* that he had observed when living in Madagascar, and whose services, therefore, might, if thought fit, be possibly utilised in controlling this "pest" in Queensland also. At the time, however, our inquiries in Madagascar did not elicit any further information.

In December, 1916, Mr. T. Waddell, of New South Wales, addressed the "Pastoralists' Review" (*op. cit.* p. 1130-1137) on the same subject, whilst also he furnished the "Review" with a photograph illustrating the birds in question in the exercise of the habit he referred to.

Mr. Waddell's communication having been brought under the notice of the Department, it instituted further inquiry, and thus elicited the following information:—The birds are commonly known as False Egrets (natives term them "Kilandi"), rather like our [the Queensland] Blue Crane (Heron) in size and shape, but perfectly white in colour. They are certainly of the Heron Family. The birds are very numerous in this region (Ambatondrazaka), and one often sees two or three with one beast. They are quite harmless, and when not with cattle are in the marshes or pasture land searching for insects. They move along with the cattle as these feed, and, as the gorged ticks drop off, they pick them up. They are very "keen on" ticks. They also pick them off the beasts. They can reach to a good height, but they also spring up for the ticks. They are numerous here in the lake region, which is favourable to their nesting operations. The nesting time, I believe, is April, May, and June. There is a legend that the natives have told me in regard to them:—"Formerly the Kilandi and the Cattle went to war. However, the bullocks won; but, because of some service that the birds did for the King Bull, they were not put to death, but spared on the birds contracting to become the slaves of the Cattle for all time" (W. Sutherland). [It has been pointed out by us that the Red Water Cattle Tick is a Madagascar denizen.]

Preliminary steps to secure living examples of these birds have—as you are aware—temporarily failed, owing to disturbance in oversea relations with Madagascar consequent on the war; but, recognising that the tick-eating habit on the part of *Aigrettes* is not confined to Madagascar, but is exhibited by Ardeidæ in West and East Africa alike, we have suggested that, failing Madagascar as a source for them, Natal might be drawn upon, since it has furnished two Tick-consuming Species, viz.:—The Little Egret (*Herodias garzetta*), and the Buff-backed Egret (*Herodias ralloides*). We have also instituted inquiries regarding the character and constitution of the *Garceros* or Egret Preserves of Venezuela, that might be of service in realising the project of acclimatising these Tick-eating Birds in Queensland.

II.—VEGETABLE PATHOLOGY.

AGRICULTURAL CROPS.

MAIZE.—(1) Cob Rot, caused by *Dothiorella zeæ* or a related organism. As its name implies it visibly affects the cob of the maize plant; the ensheathing bracts have an appearance suggestive of mildew, and the grain being dull and brownish coloured in patches of greater or less extent with an intervening felted—often pinkish-coloured—mass of fungus-mycelium. The individual grains are darker hued on their opposing faces on the cob, and on section reveal an abundance of mycelial threads intervening between the epidermis and aleurone layer which here and there form stromata that ultimately rupture the cuticle, forming at the same time isolate cavities in their midst that become filled with spores.

In one instance of the occurrence of this disease brought under notice, 15 per cent. of a small area of maize had become affected by the presence of this form of Cob Rot; but it had been subject to heavy rains. In another, inquiry was instituted as to whether such maize would be injurious to stock if incorporated in their ration. With the knowledge of what serious ill-health has been attributed to the consumption of mouldy corn (although we have no here a case of mouldy corn as ordinarily understood), the farmer is ill-advised who ventures to feed his stock with any maize that contains so-called "dead grains," such as we have here.

(2) Maize Smut, caused by *Sorosporium reilianum*. In previous Annual Reports reference has been made to the prevalence of this disease, in one locality especially; and it is since learnt with respect to it that, by following the line of procedure recommended by this office for coping with the occurrence, it has at length been largely subdued there.

COW CANE.—A variety of this fodder plant, termed the "New Frost-resisting Cow Cane," was reported when grown at Maleny, South Queensland, to exhibit decayed shoots to the extent of 90 per cent.; whereas the ordinary Cow Cane, grown under identical conditions of soil and adjacent to it, was healthy. The material illustrating this incident available for examination did not on examination yield the explanation of it.

SOUDAN GRASS (*Andropogon sorghum*, var.), affected by Smut Disease, caused by *Cintractia sorghi-vulgaris*; Roma.

BROOM MILLET ("Red Disease"— ? caused by bacteria). One who largely controls the business of broom manufacture called attention to this disease as affecting Broom Millet in the Wondai district and elsewhere. Under its influence, the plant fails in extending its inflorescence from the leaf-sheath, except to a slight extent. [*Awaiting investigation.*]

LUCERNE.—(1) Stem Rot, or Rhizoctonia disease, caused by *Rhizoctonia* (*violacea* ?), with the stems developing a brown discolouration at or below the level of the ground, with subsequent death of tissue, fine mycelial threads pervading the surrounding soil, and also winding their course over the surface of the parts primarily affected; Beaudesert District.

(2) Leaf Rust, caused by the presence of *Uromyces striatus*, the same locality; but of common occurrence, too, elsewhere.

(3) Physiological death of plant, caused by unseasonable irrigation, and removal of growth resulting from it; without subsequent procedures for maintenance of vegetative vigour.

PEA-FIELD. Stem Rot, or "Shank Disease," caused by ? *Corticium vagum* (form imperf.), resulting from the employment of insufficiently rotted-down manure of vegetable origin. In this the fungus originates prior to establishing parasitic relation with the host-plant; Ormiston.

[*Note.*—A common trouble experienced by the grower of ordinary sweet peas, but one controllable on perception of its cause; apparently at times it is carried over from season to season in the seed.]

POTATO.—(1) Brown Rot of Tuber, caused by *Bacillus solanacearum*; Zillmere and Woombye.

(2) Brown Fleck, or "Sprain," a disease of physiological origin; Woombye and Warwick.

(3) Internal darkening (blackening) of internal tissue; Yeppoon. A physiological disease, separable from the normal soil condition under which the plants are grown; successive crops on the same land—in this instance of its presence—being affected with this trouble, free from it, and again manifesting it. (E. F. T.)

(4) Stem Rot, or "Shank Disease," caused by *Rhizoctonia*; Rockhampton.

(5) "Scab," of "mechanical origin," due to the attacks on the tubers of soil-frequenting grubs; Mackay.

(6) Faulty seed, with consequent defective growth and misses caused by using physically injured seed, that, admitting the inroad of wound parasites—fungus and bacterial—become subject more or less to consequent decay.

TOMATO.—(1) Nematode Root Gall, caused by *Heterodera radicola*. Several instances from widely separated localities. This is the principal malady of the Tomato here, but not the most obvious. It has an indirect effect on productiveness, and, modifying vital processes in the plant, induces a liability to other diseases. It is commonly first manifested in the seed-bed. Growers, therefore, should always examine the root system of plants they are about to set out, and without fail exclude those that exhibit galls, even although they be but the size of a millet seed or smaller. Wide-reaching benefit may result from this, for otherwise a disease may be propagated that not only sickens the plant with which it is associated, but, on the parasite passing from it to the soil in which it is grown, a prolific source is established whence plants of almost every other kind—Grape Vine or Banana, Potato or Melon, &c.—may acquire this Nematode Root malady also.

(2) Bacterial Sleeping Sickness, caused by *Bacillus solanacearum*; Sandgate and (?) Townsville.

(3) Fusarium Sleeping Sickness, caused by *Fusarium solani*; Condamine Plains and Bowen. In the latter locality, this malady and Nematode Root Gall caused noteworthy ill-effects. Its sporadic appearance at Cleveland, Stanthorpe, and Bowen suggests that disease-affected or contaminated seed has been the means of its dissemination.

[*Note.*—Where tomato malady No. 1 or No. 2 has become manifest, all parts of affected plants should be taken off the land and destroyed. Otherwise, future crops of tomatoes (or even of potatoes—in the case of the former) may experience their onslaught, through the active agents of the diseases, on passing from these plants on their decay, becoming inherent in the soil. This remark applies to Nematode Root Gall also.)

(4) Blight (common to the Potato and Tomato), caused by *Phytophthora infestans*; Nundah and Beenleigh. This disease, when affecting the fruit, causes rapid decay on this being marketed, only a slight yellowish or yellowish-brown discolouration marking the earliest evidence of its presence.

(5) Blossom-end Rot, caused by bacteria whose destructive action serves for the invasion of fungi of more than one kind; Stanthorpe and Sunnybank.

(6) Leaf Spot, caused by *Septoria lycopersici*; Zillmere and other places.

(7) Fruit, Mechanical Injury, succeeded by fungus invasion; Brisbane (Markets).

(8) Sun Scald; several instances.

CABBAGE, TURNIP, ETC.—(1) Bacterial Disease.—caused by *Pseudomonas campestris*; Brisbane, Toowong, Yeulba; affecting both the Cauliflower and the ordinary Cabbage—in the latter case even when it has already "headed up." Apparently originated through use of seed already harbouring the organism, and locally disseminated by biting insects.

(2) Downy Mildew, caused by *Peronospora parasitica*; affecting Cauliflower, Brisbane.

(3) Cabbage Seedling Failure; Cedar Creek. Commonly caused by *P. parasitica*; but in this instance due to root-poisoning.

(4) Cabbages.—Sickness apparently due to unsuitable irrigation water; Winton.

(5) Root Galls of Turnip, caused by *Plasmodiophora brassicæ*; Woombye.

CUCURBITACEÆ (Pumpkin, Melon, &c.).—(1) Powdery Mildew, caused by *Erysiphe cichoracearum*; Kingaroy, Yeppoon, and several other places. This malady appears to manifest itself, on the Pumpkin plant especially, everywhere here, when suitable climatic conditions for its development obtain. However, although evidently at times notably injurious, no steps are taken to combat it. Nevertheless, its presence may be prevented by the timely application of simple fungicides.

(2) Sleeping Sickness of Pumpkin. Apparently caused by *Fusarium cucurbitæ*; Knapp's Creek.

(3) Stem Disease of Water Melon, caused by *Colletotrichum oligochæti, aff.*); Esk.

(4) Nematode Root Gall in Cucumber; Galuguba.

BEET.—Nematode Root Gall, caused by *Heterodera radicola*; Brisbane.

BEAN (*Phaseolus*).—Rust Disease, caused by *Uromyces appendiculatus*; Brisbane. Nematode Root Gall, caused by *Heterodera radicola*; Brisbane.

Tonga Bean: Leaf discolouration and death from non-parasitic origin, probably caused by toxic soil condition; Warrnambool. Broad Bean (*Faba*): Non-fertility, caused by insect attack—that of a Nitidulid beetle—on stamens of flowers; Brisbane.

COTTON.—Shedding of Bolls, due to local climatic conditions; Runcorn.

HORTICULTURAL CROPS [FRUITS].

CITRACEOUS PLANTS.—(1) Maori or Fruit Russetting, caused by *Phyllocoptes oleivorus*; several instances, including Cairns.

(2) The same, discrete form; Cairns.

(3) Brown Spot of Fruit, caused by Red Mite (*Tenuipalpus*); Blackall Range and Cairns.

(4) Melanose of Fruit and Wood, caused by Red Mite (*Tydeus* sp.); Palmwoods, Blackall Range, &c.

(5) Leaf and Fruit Scab, caused by *Ramulari acitri*—(*a*) On Lemon; Palmwoods and Toowoomba. (*b*) On Mandarin; Brisbane, Woombye, and Blackall Ranges. [*Note.*—This disease is becoming increasingly prevalent on the Mandarin being disseminated in nursery stock.]

(6) Bark Disease, caused by *Corticium* sp.; Montville.

(7) Collar Rot of Lemon. Apparently following mechanical injury; Currumbin.

(8) "Root Disease" (so-called); Montville. Assumed to be of fungus-origin and caused by *Armillaria*; and thus accordingly treated experimentally with fungicides; but due, in fact, to Curculionid beetle attack under conditions of vegetable weakness.

(9) Exanthema, or General Gum Flux, of physiological origin; Cairns. In the malady to which the term "Exanthema," bestowed elsewhere on a citrus affection, is here applied, numerous minute fissures that extended through the bark to the underlying cambium arose, and the actively growing tree, in response to the injury, had exuded gum from each of them, that had hardened and become brittle without blending. In confirmation of the correctness of the explanation advanced, the contributor stated that the young tree affected had been recently planted in almost pure sand where it had suddenly experienced good growing conditions, after having had its development temporarily completely checked. This affection simulates the appearance of the notorious bacterial disease ("Citrus Canker)."

(10) Bud-Suppression, or Proliferation, with Exanthema, &c.; Cairns, Montville, Woombye, Russell Island, &c. This is a very serious disease, capable of being disseminated in nursery stock, and apparently primarily caused by a Mite—a species of *Tarsonymus*. It brings vegetative growth to a standstill with more or less complete unproductiveness. The following symptoms amongst others characterise it:—The buds in the leaf-axils, instead of being single, are numerous or bunched, and commonly arise from a tumid expansion in the bark. When these buds have extended, the longer shoots are compressed or flattened (? fasciated), and more or less curved or twisted; other shoots—often the earlier formed ones—soon cease to lengthen, and—even whilst still short—may gradually die back. Meanwhile, more or less gum may have issued (Exanthema) at the surface of the growing shoots in the form of small elongated blebs, darken in colour, and dry up. Any multiple-development of the shoots, not traceable to disbudding, should be regarded with suspicion as possibly indicative of the presence of this malady.

(11) Flower-sterility in Lemon; Sandgate and Brisbane. In the former instance of this, the grower had remarked that on certain Lisbon lemon trees (although the Villa Franca variety manifested the phenomenon as well) quite 70 per cent. of the flowers failed to set fruit. This is due to a feature noticed also by O. Penzig (Studi Botanici sugli Agrumi, p. 63), and especially liable to be manifested in the Lemon and Citron, that in many varieties of all species of Citrus the corymb, or group of flowers arising at one spot, does not arrive at its full development, save in the case of a single terminal flower, and that this flower is the first amongst these flowers of this inflorescence to open. It is also a fact (not, however, noticed by Penzig) that the reduced development of the other flowers is in the direction of the suppression of their ovaries, these blooms being permanently staminate, and therefore incapable of setting fruit. It has further been remarked by us that there may be an individual variation, in Lemon trees especially, in the relative number of staminate flowers produced, and that, therefore, without careful selection of parent-trees, in propagation by budding, a marked difference in ultimate prolificness, and therefore in market value, of the resulting nursery stock may result.

(12) Fruit Dropping, due (*a*) to drought, Blackall Range; (*b*) to application of irritant insecticide, Flaxton; (*c*) to Green Bug puncture, Roma and other places; and (*d*) to Moldiness following Fruit Fly attacks, Mapleton.

(13) Green Mold of Fruit (*Penicillium glaucum*).—(*a*) Following mechanical injury in marketed oranges; and resulting as above. (12 (*b*)). This is a not uncommon incident in the orangery and of some significance, since citrus fruit, whose rind is pierced by the ovipositor of the Fruit Fly when ripening has but just commenced, may often overcome the attack—the fruit fly maggots early dying. With the presence of the Green Mold, however, we find this entering as a wound-fungus, invading the entire fruit and causing its prompt destruction—a soft area of decay, a dull whiteness, extending over this, and then a pea-green powdery coating, being the successive stages, indicating the process of corruption, and the growth of this organism that occasions it. It is, therefore, incumbent on the fruit-grower not only to attack the Fly by every means available, but also endeavour to obviate the presence of moldy fruit that renders its presence to the citrus-grower especially baneful. Decaying and moldy oranges should be, therefore, gathered or picked up as soon as seen, preferably using a spiked stick in doing so, to prevent the distribution of fungus spores, should the green stage have already been attained by it. If inconvenient to collect them at once in a bucket containing a little blue-stone solution, their being merely placed under the soil, where they may be lying, with as little disturbance as possible, may still serve a useful purpose.

(14) Black Spot, caused by *Phyllosticta citricola*; Cairns and Bowen. A correspondent (G. W.) remarked that in trees that had been pruned, and had their vigour thus enforced, less "brand" was noticeable.

(15) Brown Rot of Oranges, caused by *Phythiacystis citriopthora*, Brisbane (Markets), formerly received from Bowen.

(16) Die-back with gummosis; Aubigny and other places.

(17) "Abnormal Fruit." In October, 1918, a fruit was received from Wellington Point showing the characters of Lime and Lemon, the proportion of each component form in the combination being strictly delimited. Such occurrences are very uncommon and worthy of record.

Deciduous Fruit Trees. (Apple, Pear, Plum, Peach, &c.)—(1) Disease of young wood (Apple), caused by *Sphæropsis malorum*; Toowoomba. Resulting in this case in the fruit becoming small and shrivelled.

(2) Disease of wood (Apple); doubtful as to origin; Stanthorpe. This malady was experienced by a number of trees of the varieties Gravenstein, Trivet, and Richmond; the last-mentioned being the worse affected. It was characterised by a dying-back of the growing wood from the branch ends, the trouble extending continuously backwards as the affected wood was excised until almost the entire tree was sacrificed. The examination of portions of the wood, submitted as evidence of the disease, did not throw light on its origin.

(3) Bitter Pit of Fruit (Apple); Stanthorpe.

(4) Internal Decay of Fruit (Pear); Toowoomba. In January, 1919, this peculiar fruit trouble was complained of. Fruit (even still green) might appear when picked sound and healthy; but within three days it would have become internally soft and brown. Unidentified.

(5) Sunscald (Plum); Stanthorpe. The fruit was shrunken and puckered on one face.

(6) Die Back (Apricot); Toowoomba.

(7) Dimpling of Fruit (Peach); Oakey district. Evidently due to its being attacked when green by some plant bug (? *Nysius vinitor*).

(8) Twining of Fruit (Peach); Toowoomba. The individual fruits had a common fasciated stem and exocarp; but the two independent stones were simply fixed together along opposing edges.

(9) Abnormal Fruit (Peach); Stanthorpe. This was a combined Peach and Nectarine in definite proportions, the component of each plant in the combined fruit being well delimited. (*Vid.* Citrus, p. 46).

(10) Bark Fungus (Nectarine); Toowoomba. Non-pathogenic; the fungus representing the early growth of *Polyporus* (*Trametes*) *cinnabarinus*, and not a *Stilbum*, as regarded by correspondent.

(11) Persimmons. — Bark Canker; Mount Gravatt. Apparently identical with disease found occurring on young trees imported from Japan in December, 1916.

(12) Custard Apple (*Anona cherimoyia*).—"Die Back," caused by insanitary soil conditions; Brisbane.

(12) Papaya.—Fruit Disease, caused by *Glœosporium* sp.; Brisbane and Belmont.

(14) Date.—Leaf-disease, caused by *Graphiola phœnicis*; Toowoomba.

(15) Grape.—Sunscald (foliage); Lindum.

[*Note.*—Grape Vines were especially affected by this trouble, both as to foliage and fruit, in Southern Queensland; some varieties more susceptible than others. The usual vine maladies (Powdery Mildew, Anthracnose, &c.) in several localities where spraying was not undertaken.]

Banana.—(1) Stool decay, primarily induced by injury affected by rodent *Scarabœid* grubs; Nambour.

(2) Root Disease, caused by *Fusarium* sp.; Rockhampton, in sugar variety only.

(3) Nematode Root Gall, caused by *Heterodera radicola*; several localities.

(4) "Cabbage Disease," or Growth Stoppage; Currumbin and Tweed River. Due to one or more causes, operating through the root-system:—Nematode Root Gall (*Heterodera radicola*), nematode attack producing root decay only, and malnutrition. An apparently similar disease affecting the Banana in the Bonin Islands has been investigated by Professor S. Hori (*vid. Engei no Tomo* (Jap.), xiv., pp. 9-11, 1918). Hori has concluded that the trouble there is non-parasitic, and due to deficiency of potash in the soil. His investigations do not, however, appear to us to be conclusive on this point.

(5) Fruit-end Rot, due apparently to meteorological factors and primarily non-parasitic; Currumbin, Tweed Tiver, Cooroy, Eudlo, Mapleton, &c. This disease usually starts when flowering is in progress, and its commencement may be noticed during the first six weeks of fruit development. It appears to be induced by a sudden increment in vegetative vigour and tissue turgour following growth retardation brought about by cold and reduced atmospheric humidity, and is thus primarily mechanical with sap-exudation as a symptom, absorption of it causing local death that promotes the inroads of air-born organisms (*Glœosporium* spp., &c.) that serve to extend the trouble. This malady—as may be inferred from the foregoing—is worse in certain localities and in plantations with particular aspects, and during some months of the year causes noteworthy loss.

(6) Fruit Rot. Banana buyers have consulted the office regarding a fruit trouble occurring in bananas from the North Coast districts, characterised—as they describe—by a softening of the stem-end of the ripening fruit, succeeded by a "coloured mushy slimy substance that, forming around the 'seed cavity,' oozes out with pressure." No specimens illustrating this have, however, been received.

Pineapple.—(1) Root thickening (simulating Nematode Root Gall) caused the irritation consequent on abscission of these organs by soil-frequenting grubs; Palmwoods.

(2) Fruit "Crippling," physiological; Nudgee, &c.

(3) Fruitlet Core Rot, primarily caused by *Tarsonymus* mite, followed by local fungus-invasion; Moreton district (in marketed fruit).

(4) Fruit Rot, apparently caused by *Thielavia* sp.; the same.

(5) Fruit Softening, developing outwards from the "core" to the surface; Petrie. Apparently physiological and in winter crop only.

[*Note.*—With reference to the foregoing Pineapple affections, one may remark on the prevalence of the ill-advised procedure of drawing on old and depauperated plants as sources for new stock; any plot that has run out being resorted to for this purpose. Inherent weakness and proneness to disease are very likely to be secured in this way; whilst by the opposite course vigour and healthiness in the plantation may be expected. This is the lesson of experience. Prospective pineapple-growers should, in fact, be regardful of the history of the "suckers" they are securing, rather than of the lowness in price for which they may be obtained.]

(6) Root Injury by Soil Irritants and consequent Malnutrition; Palmwoods. Apparently due to the action of sesquioxide iron salts existing in subsoils containing iron, but maintained in a defective state of aeration, through non-attention to ordinary drainage and deep tillage requirements, or through want of supply of some special toxin-counteracting bodies.

[*Note.*—This conclusion, based on our field observations, has been tentatively adopted by the Director of Fruit Culture (Mr. A. H. Benson); and he has devised a system of soil-treatment accordingly, now being proceeded with at his hands. The question related to a considerable area of country otherwise congenial to pineapple requirements.

Prickly-pear.—Renewed inquiry has been made regarding certain minor affections of *Opuntia* spp., already referred to in previous reports: the investigations being principally based on material furnished by Mr. A. Temple Clark. The possibility of some malady being discovered of a virulent nature exclusively confined to the prickly-pear tribe of Cactaceæ, and that—spontaneously propagating—may serve the purpose of controlling the spread of our notorious weed or even of locally exterminating it, is never lost sight of by this office or the correspondents, interested in prickly-pear, in touch with it.

The Flower Garden.—Diseases affecting the growth of ornamental garden plants of one kind or another have been referred to us. Amongst these were:—(1) Peculiar tumourous growths on the roots of the Rose; Brisbane. (2) A Chrysanthemum leaf-disease; Glen Eden. (3) Stem Rot of Sweet Pea, caused by a soil-resorting fungus; Wooloowin and Brisbane. (*Vid.* s.v. Field Peas, p. 4.)

Timber Diseases.—With continuously growing interest in forestry products, timber-destroying maladies and diseases of timber-yielding trees will doubtless receive added attention. Hardwood destruction by a species of *Fomes* or *Trametes* has been referred to the office from Roma; and a disease affecting wooden stays, when embedded in the soil, yielded by a Brisbane occurrence, has been communicated by the Engineer of Railways.

Useful Fungus Diseases.—In addition to what has been noted under "Prickly-pear," attention has been paid to certain fungi associated fatally with Scale Insects. This has been referred to us, a disease of this character victimising the Pink Wax Scale Insect (*Ceroplastes rubra*) at Cardwell; *Scoleconectora coccicola*, E. & E., attacking the Fulvous Mussel Scale Insect (*Lepidosaphes Beckii*), at Mapleton; and *Microcera coccophila* in similar relation to the Red Scale Insect at Gympie. As has been stated by us previously, the enemies of the class referred to, and those of Scale Insects especially, operate almost exclusively under humid conditions and to the extent locally that these obtain.

GENERAL.

The collections, comprising—(1) series of insects of all orders systematically arranged; (2) series of insects of special economic bearing, exhibited under the several plant species; (3) animal parasites (ectozoa); (4) insects injuriously related to substances of animal or plant origin: (5) life-history series, in show-cases for special educational purposes; (6) plant pathological series; (7) specimens preserved in fluid, &c.; (8) insectivorous bird collection, in cases; (9) collections illustrative of food components of specific birds—all under the special care of our single Assistant (Mr. H. Jarvis)—have each been augmented during the year, their registration perfected, and their sound condition preserved.

Mr. Jarvis has also continued the preparation of coloured studies of economic insects and their life histories, as well as of disease-affected plants.

And in this as well as in the foregoing undertaking, as well as in carrying out the general work of the Branch, both in the field and office, whenever called upon, his skilful and persistent service has been noteworthy.

HENRY TRYON,
Entomologist and Vegetable Pathologist.

REPORT OF THE DIRECTOR OF FRUIT CULTURE.

SIR,—In submitting a report for the year ended 30th June, 1919, I have, for the third consecutive time, to remark on the very erratic weather conditions we have experienced in Queensland during the past twelve months. It is essential that I do so, as the success or failure of the fruit industry is mainly a question of climate, and is largely dependent on an even distribution of rainfall throughout the year. This is owing to the fact that our fruitgrowing districts are so scattered, and the land devoted to fruit culture is frequently so broken and irregular that irrigation on a large scale is not practicable, and growers have, therefore, to depend on the rainfall.

The winter of 1918 was one of the severest on record, over sixty consecutive frosts being recorded in the Stanthorpe District, and numerous severe frosts occurred on our Downs country and Western areas, as well as in several coastal districts. The weather was, however, dry, and the cold was beneficial to deciduous fruits; and on the coast, even where the frosts were fairly heavy, little serious damage was done to either bananas, citrus fruits, or pineapples, though in parts usually free from frost mangoes were cut hard back, but not killed.

The cold winter was followed by a dry spring and a very hot and dry summer; consequently, there was very little growth of any kind, and citrus fruits which blossomed freely failed to set a good crop. Pineapples were very backward, and bananas suffered from the dry spell. From the end of February, when we got our first beneficial rains in the coastal districts, to the end of June we had a well-distributed but not heavy rainfall, with the result that there has been a record growth. Citrus trees recovered rapidly, and are now looking remarkably well. Pineapples, which made little or no growth for months, have made a rapid recovery, and are doing well. All kinds of autumn-sown vegetables have made good growth, as have also all kinds of fodder crops; so that the outlook, considering the time of the year, is very satisfactory.

The autumn growth continued right up till the middle of winter; and it was well on in June before there were any frosts in the Stanthorpe area to steady down the growth of apples, pears, plums, peaches, &c., so necessary for the succeeding crop, and without which the prospect was not too bright, as when the trees become too advanced during the winter they make a very early start in spring and are very liable to be seriously injured by late spring frosts.

At the time of writing (end of June), as already stated, the outlook of the fruit industry is good as far as weather conditions are concerned, and there is a good promise for a record crop of fruit during the 1919-1920 season.

During the year under review not only has the season been erratic, but the markets have followed suit, owing to the scarcity of certain lines and the uncertain supply.

Record prices have been obtained for all classes of fruit and vegetables, and those who have been fortunate enough to have them for sale have had a very good year. At the same time, others who have not been so fortunate have been badly hit.

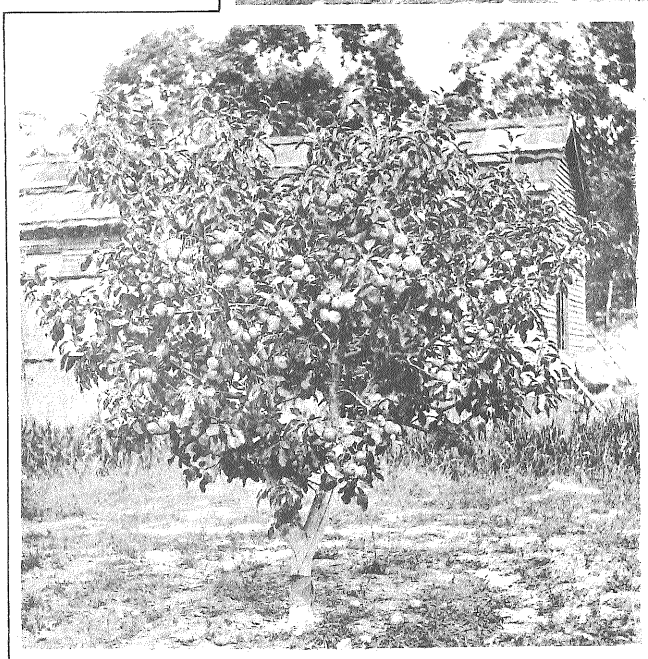
Pineapples have sold well right through the year; and bananas have in some instances fetched very high prices, as also have first-class apples, plums, peaches, tomatoes, citrus fruits, custard apples, grapes, passion fruit, strawberries, &c.; and vegetables, including potatoes, have put up a record.

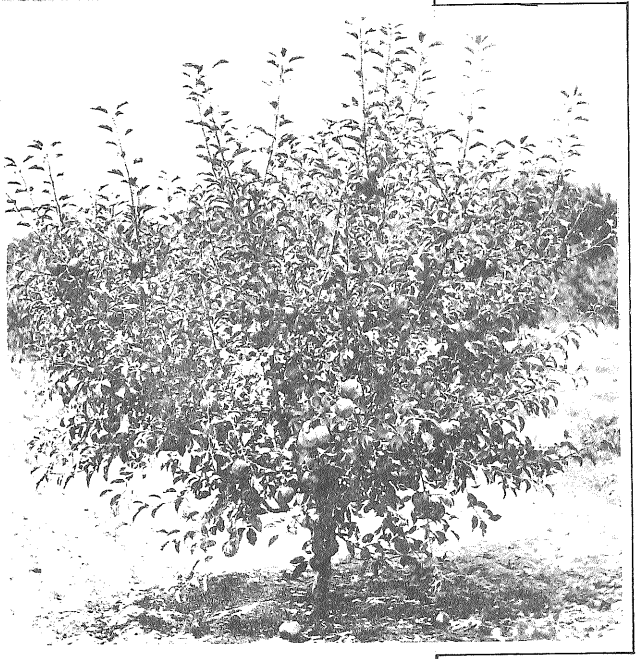
The spring crop of potatoes was a failure in most parts, owing to the want of rain; but a few growers were lucky enough to obtain a good yield, from which they realised a phenomenal return. Fortunately, there was a fairly good autumn planting of potatoes, which has given a fair yield, and for which also excellent prices have been obtained. Some growers, however, in their anxiety to place their crop in the market as early as possible, were very careless in the manner in which they marketed their potatoes, digging them when the ground was wet and the tubers coated with soil—so much so that in one instance where the tubers were stopped by an inspector they were found to contain not less than 20 per cent. of soil. Action was taken in this and in other cases, with the result that a great improvement has taken place, and there is now little to complain of. The practice of selling soil as potatoes is not, however, confined to our local producers, as we have had several examples from the Southern States despite the fact that the consignments in question were covered by an inspector's certificate which provided that the maximum amount of soil permitted should not exceed 3½ per cent.

During the year steady progress has been made in organising the fruitgrowing industry and placing it on a more satisfactory basis.

At a local Conference of North Coast Fruitgrowers, held at Palmwoods in November, 1918, it was decided to form a combined North Coast Fruitgrowers' Association, to include all local associations between Caboolture in the south and Gympie in the north, with the result that a Provisional Directorate was formed and some 8 local societies joined. Now, after some six months' work, this number has been increased to 28, and practically the whole of the growers in this district are affiliated. This association has done excellent work, which has resulted in the regular running of fruit trains to Wallangarra, and thence to Sydney and Melbourne. As was to be expected, there were many initial difficulties to be overcome; but now the service is working smoothly, and growers are securing material benefit therefrom.

The question of sending our fruit South by train, instead of by water, has been under consideration for many years; and the unsatisfactory condition of the coastal shipping trade, resulting from the war, compelled growers to find other means of transit for their produce; hence the fruit train, the establishment of which has not only been fully justified, but, what is of more importance, it has latterly provided the only means by which we have been enabled to send our fruit south. As showing what the fruit train has accomplished up till the 30th





1. General View of an Orchard—Ballandean.
2. Seven-year Commerce Apple (Atkins).
3. Three-year Jonathan Apple (Jeff. Ross).
4. Avenue of Winterstein and Jonathan Apples (Teal and Sons).

of June, no less than 70,927 cases of bananas, 7,448 cases of citrus fruit, and 65,561 cases of pineapples, besides a quantity of vegetables and miscellaneous fruit, went *viâ* Wallangarra, the fruit so forwarded amounting to about 45 per cent. of the total export for the year, although no fruit to speak of was sent by train during the first half of the year.

At the request of the Montville Fruitgrowers' Association, which is affiliated with the North Coast Association, the Department arranged for a Conference of Fruitgrowers in Brisbane, which met on the 3rd and 4th April. The conference was well attended, delegates representing some 41 associations being present, and the subjects under discussion were well debated.

A report of the Conference appeared in the June number of "The Queensland Agricultural Journal," so that there is no necessity for me to refer to it in detail, but simply to mention the decisions arrived at, which were as follows:—First: To form a non-trading and non-political association to deal with and watch the interests of the fruitgrowing industry throughout the State. Second: That the name of the association should be "The Queensland Federated Fruitgrowers' Association." Third: That the State should be divided into six fruitgrowing districts, with power to add to this number. Fourth: That all local associations in each fruitgrowing district should unite to form one District Association, as has already been done in the case of the North Coast and Stanthorpe districts. Fifth: That, once the District Associations have been formed, delegates from these associations should meet and form "The Queensland Federated Fruitgrowers' Association."

Interesting discussions took place on the questions of fruit cases, manures, grade marking of fruit cases, packing of fruit, and the standardising of preparations used for the destruction of fruit pests. With regard to the last question, a resolution was passed asking the Honourable the Minister for Agriculture to introduce legislation to deal with this matter.

The question of amending the Diseases in Plants Act to provide for the imposition of a registration fee on orchards was fully discussed, the Conference being by no means unanimous on this matter, with the result that it was decided to refer it to the Queensland Federated Fruitgrowers' Association when that body has been properly constituted.

An interesting discussion on the Fruit Fly took place; and Mr. Harvey, the discoverer of the "Harvey Fruit Fly Lure," who was present, gave much valuable information respecting the success he had achieved in attracting and catching both the male and female Queensland Fruit Flies, and intimated his intention of following the matter out to a successful issue.

The handling of fruit on the railways was also discussed; and the unsatisfactory method of unloading the fruit at Roma Street was very severely criticised, as it was claimed that it entailed heavy losses to growers on account of the damage done to the fruit.

Since the conference, steps have been taken to form a Brisbane District Association, and it is expected that other districts will fall into line at an early date.

Experiment Work.

During the year a series of cultural, manurial, pruning, and miscellaneous experiments have been undertaken, and some interesting results have been obtained.

Bananas.—A number of experiments have been carried out in the Perwillowen district, near Nambour, for the purpose of testing, first, the possibility of protecting the roots of bananas from nematodes, as this pest causes serious losses to banana-growers, and hitherto there has been no efficient remedy known.

Some two years ago I decided to test the effect of dipping banana plants, prior to planting, in a 1 in 1,000 solution of corrosive sublimate, which I had previously found beneficial in the case of potatoes and for destroying earth worms; so thought it possible it would be found of value in the case of bananas.

A number of strong suckers were, therefore, obtained, and all roots and loose matter were removed from the bulbs, and they were then placed in a solution of corrosive sublimate made by dissolving 1 oz. of this material in 6 gallons of water, the result being a solution of 1 in 960. They were allowed to remain in the solution for two hours, and then planted; and no injury was done, even though they were allowed to remain in the solution much longer.

The suckers, when so treated, were planted at different depths—viz., 12 inches, 18 inches, and 2 feet—in volcanic soil of fairly heavy texture; and all came away without any loss, those planted at 12 inches making the earliest start and eventually producing the best plants as well as developing the most suckers. So far no nematodes have been discovered on the roots of any of the treated plants, irrespective of the depth of planting.

In addition to treating the plants prior to planting, they were manured in January last. Although all the plants were benefited by the manuring, those planted 12 inches deep showed by far the best results, and further manures containing potash proved their superiority over manures in which this plant food was not present. Potash by itself produced a good effect; but a complete manure containing phosphoric acid, nitrogen, and potash, and consisting of a mixture of 2 cwt. of meatworks manure, ½ cwt. of sulphate of potash, and 15 lb. of nitrate of soda, used at the rate of 11½ lb. to the plant, broadcast—produced the best results. This bears out the results obtained by the banana manuring experiments conducted some years ago at Buderim Mountains, and further demonstrates the value of adding nitrate of soda, so as to provide an immediate supply of nitrogen which stimulates the growth till the more slowly acting organic nitrogen in the meatworks manure becomes available.

The result of the experiment—which will be continued—points to the fact that bananas can be grown successfully on land that has been depleted of its available plant food by judicious

though heavy manuring with complete fertilisers rich in potash. This means that, once potash is again available at a reasonable cost, much land that is suitable for growing bananas, but which has become impoverished, can again be put under this crop with every prospect of success.

Citrus Fruit.

A number of citrus fruit trees of different kinds, growing at Montville, and that have previously borne heavy crops of fruit, having shown unmistakable signs of failing, a careful examination showed that the roots of these trees, particularly those near the main trunk and close to the surface of the ground, were badly attacked by a borer beetle of the weevil type, the injury caused by the larvæ of this insect resulting in the partial or total ringbarking of many of the roots, thus resulting in serious injury to the tree. Numerous experiments have been conducted, having for their object—first, the possibility of destroying the beetles without injuring the tree; second, the possibility of treating the roots of the tree so as to prevent the beetles from attacking them; and third, the effect of using a complete manure in conjunction with remedial measures. The trees experimented with were in a very bad state, and the test was consequently a severe one; further, dry weather supervened, and it was not for some months after it was applied that the manure had any chance to act.

The manure used was a complete fertiliser that was immediately available, provided there had been sufficient moisture in the soil, and it was composed of 100 lb. of nitrate of soda, 60 lb. of superphosphate, and 40 lb. of sulphate of potash; the mixture thus containing approximately 10 per cent. of potash, 8 per cent. of nitrogen, and 5 per cent. of phosphoric acid. Five pounds of this mixture were applied to an area of some 13 square yards immediately surrounding the trunk where the beetles were most numerous, and this was well mixed with the soil. The following substances were tested to note their effect on the beetles, viz.:—Sulphate of iron, 2 lb. to the tree; Bordeaux mixture 6-4-40, 4 gallons to the tree; 24 lb. of freshly slaked lime to the tree; 2 gallons of 1 in 1,000 solution of corrosive sublimate; 2 gallons of lime sulphur wash, made by adding 1 pint of concentrated lime sulphur 32 degrees Beaume to $1\frac{7}{8}$ gallons of water; 1 oz. arsenate of lead in 2 gallons of water; and bisulphide of carbon, 2 oz., 3 oz., and 4 oz. per tree, respectively.

None of these substances has had any ill effect on the tree to which it has been applied; and, although no individual remedy has proved a complete success, some of the trees treated with corrosive sublimate, arsenate of lead, or bisulphide of carbon, when examined on 27th June, were found free from borers.

It is premature to make any definite statement, still the results of the experiments so far tend to show that, if the roots of the tree have not been completely destroyed, a new root growth can be encouraged by the use of quick-acting manures, and at the same time the beetles can be checked by several substances.

The experiments will be continued during the spring, when it is expected that more definite results will be obtained. Trees infested with root borers, in another orchard, were also experimented with. In this case common salt was used at the rate of 3 lb. and 5 lb. per tree, respectively, in conjunction with a complete quick-acting fertiliser, and it was also used by itself, when 6 lb. was applied. The results obtained in this experiment were very encouraging, as none of the trees showed the presence of borers when inspected at the end of June, salt evidently proving distasteful to these insects, and no ill effects followed its application. This is important, as if further experiments confirm these results it provides a cheap method of preventing this insect from doing any serious damage.

Manurial, cultural, and pruning experiments were also carried out in this orchard, particularly with respect to lemons, which have been very successful, as they have shown that where lemon trees have been neglected so that they have produced long straggling growths, and have become more or less infested with scale insects of various kinds, fungus diseases, &c., they can be completely renovated, provided they have a sound root-system, by heading hard back and forming a new top to the tree, the young growths so produced being kept in control so as not to become straggling, but to develop a good lateral growth on which to grow the fruit. The pruning and spraying were assisted by cultivation and manuring, with the result that trees that were apparently valueless two years ago are now carrying good fruit and give promise of an excellent crop for next season.

Pineapples.—Numerous complaints having been received from growers in the North Coast and Brisbane fruit districts respecting the failure of pineapple plants, a series of experiments has been commenced in the Palmwoods and Nudgee districts. In the former a piece of land that was formerly under citrus fruits between which pines were grown was selected, and a Committee of the local Fruitgrowers' Association appointed to work in conjunction with the Departmental officers. The land was well and deeply worked prior to planting, so as to see whether the trouble can be overcome by better cultivation, as there has been a tendency to plant pineapples in land that has been very indifferently prepared. Having prepared the land thoroughly, a series of manurial tests have been initiated, these including the application of ground limestone. Though the planting was done somewhat late in the season, the young plants, when examined at the end of June, looked well and had developed a good root growth. It is too early to pass an opinion as to the success or otherwise of the experiments, which will be continued during the coming year.

The second series of experiments is being conducted at Nudgee on growing pineapples that showed signs of failing. The plants had a poor hold on the ground, and a large number of the roots were dead. In this case the land between the rows was well worked so as to provide soil for placing round and between the plants, so as to encourage root development, and, in addition, the plants so treated were given ground limestone and a complete fertiliser.

The result of this treatment has been the development of a fresh root system, and the plants have improved very much in appearance.

PRUNING.

1. Pruning a Young Orchard.

2. Renovating Aged Orange-trees.

Definite results will not, however, be known until the plants have produced their next summer crop.

The failing of pineapple plants is by no means a new thing in this State; and, despite numerous examinations—microscopical and otherwise—it has not been possible to determine any definite fungus or insect pest as the cause, but the investigations point rather to unfavourable soil conditions or the presence of soil toxins that are injurious to the fine fibrous roots of the plants. If this surmise is correct, then the experiments that are being conducted, and which aim at bringing about healthier soil conditions, should give definite results that will be of considerable value to growers.

Grapes.—The Experiment Vineyard at Coominya has been particularly free from disease of any kind during the year, the result of the dry spring and summer, which was unfavourable to the development of fungus diseases. As a result, the vines, taken as a whole, made a good growth; but, of course, as was to be expected, some made much better growth than others, and proved more adapted to the local conditions. A small crop of fruit was produced; and a number of cuttings of phylloxera-resistant stocks, and of table and wine varieties, are available for distribution. Numerous inquiries for the cuttings have been received, and they will be despatched during the month of July. Careful records regarding the different varieties of grapes that are being tested have been kept by Mr. C. Ross, Instructor in Fruit Culture, who is in charge of the vineyard, and a report by that officer was published in the May number of "The Queensland Agricultural Journal" for 1919.

Deciduous Fruits.—Numerous experiments have been carried out in the Stanthorpe fruit district, particularly with respect to the treatment of Woolly Aphis or American Blight of the apple, with the result that the fumigation of the affected trees with hydrocyanic acid gas has given by far the most satisfactory results, as, when systematically carried out, the pest has not only been kept in check but actually exterminated. This is very important, as it proves the possibility of growers being able to grow successfully many good varieties of apples that are at present so subject to the attack of this pest that their cultivation is unprofitable.

Fruit Fly.—Numerous tests have been carried out during the year with Harvey's Fruit Fly Lure, with the result that the lure as now prepared by Mr. Harvey has proved to be very attractive to both male and female Queensland fruit flies, and that there is no difficulty in trapping them by the use of the lure.

Up to the present Mr. Harvey has not placed his lure on the market; consequently growers are unable to avail themselves of his discovery. During the year the fly has done a comparatively small amount of damage owing to the dryness of the season, but at any time it may appear in vast numbers and cause widespread destruction; so that it is hoped Mr. Harvey will see fit to make the lure, discovered by him, available at the earliest possible date.

Diseases in Plants Act.—Taken as a whole, fruit and vegetable pests were kept well in check during the year, the only district in which any pests showed an increase being that of Stanthorpe, where Codlin Moth was more in evidence than it has been for some years.

This is to be accounted for by the inability of many growers to spray their trees with arsenate of lead, owing to their having no water available for spraying purposes on account of the exceptionally dry spring. Every precaution will, however, be taken to keep this serious pest from spreading, and the spraying regulations will be rigidly enforced during the coming season, so that the pest will be kept in check. The beetle borer of bananas has been confined to those districts already infested, as no further outbreaks have been reported. The prohibition of the distribution of suckers from infested areas has thus had good results. Irish Blight has only made its appearance in the Logan district, and has not been present even there to a serious extent. If growers would only take the necessary precautions of treating the seed and spraying the plants, this disease need never cause any heavy loss in this State.

The condition of our nurseries is steadily improving, and the majority of trees that have been offered for sale during the year have been clean. This has been brought about by the inspections that are made from time to time, and by the destruction of infested trees or plants as soon as they are discovered, and the treatment of adjacent trees or plants.

Fruit Cases Act.—There is a considerable improvement in the marketing of fruits and vegetables, and growers who do not comply with the regulations are proceeded against. The principal offences are "topping" and "failure to obliterate old brands on second-hand cases and to re-mark them with the packer's brand." Growers now realise that they must comply with the regulations.

Fertilisers.—During the year growers have been penalised by the high price of commercial fertilisers; and were it not for the good returns that have been obtained for the sale of produce, it is questionable whether the use of such fertilisers would have been commercially profitable. Potash, which is so essential for bananas and pineapples once the virgin richness of the land has become depleted, has been practically unobtainable, as also has nitrate of soda; but it is hoped, once the oversea shipping trade becomes normal, that these important manures will again become available at a reasonable rate.

In order to assist fruitgrowers and farmers generally, the Department installed a lime-crushing plant near Gore, where there is a good supply of high-class limestone, but, unfortunately, there was so poor a response that the plant has had to be shut down. Growers do not realise the value of lime, or the even more important fact that many of our Queensland soils are so deficient in this essential material, which, though not properly speaking a manure, yet exerts such an influence on the constituents of the soil as to render its application frequently of great value to the producers.

During the year there has been a slight rearranging of the Fruit Staff consequent on the death of the late Mr. S. C. Voller; Mr. G.

Williams being transferred from Cairns to Brisbane, and Mr. Leslie from Brisbane to Toowoomba. Mr. S. Scerri has also been appointed an Assistant Instructor in Fruit Culture, and has been busily engaged for some months in giving general instruction in fruit matters in the North Coast and Wide Bay Districts.

An analysis of statistical records of exports and imports, which I beg to attach hereto, shows a very heavy falling off in exports from all districts from Rockhampton to Cairns, inclusive. Bowen, which usually exports large quantities of tomatoes and cucumbers to the Southern States, shows a heavy falling off, and the banana shipments from the Cairns and Johnstone River Districts have practically ceased. The export of Southern-grown bananas and pineapples is, however, satisfactory; and, as previously mentioned, nearly one half of the total shipments of these fruits has been made by rail.

The export of citrus fruit has been exceptionally light, owing to the smallness of the crop and the good prices obtained for these fruit in the local markets.

Heavy imports of Southern-grown fruit have come forward, showing that Queensland has yet a long way to go before our local demand can be supplied. Large quantities of potatoes and onions have also been imported, for which very high prices have had to be paid; and there is, therefore, every inducement for our growers to increase the local output of these very essential foods.

There is no reason why we should be so dependent on the imported article, as there are many parts of the State in which they can be grown successfully.

In conclusion, I have to thank every member of the Fruit Branch for the assistance they have given me throughout the year.

EXPORTS FOR YEAR ENDED 30TH JUNE, 1919.

District.	Bananas.	Oranges.	Pineapples.	Tomatoes and Cucumbers.	Vegetables.	Mixed Fruits.	Strawberries.	Potatoes and Pumpkins.	Canned Pines and Jam.
	Cases.	Cases.	Cases.	Cases.	Cases.	Cases.	Trays.	Bags.	Cases.
Brisbane	78,413	85	96,702	6,045	2,298	4,098	..	..	67,658
Wallangarra	70,927	7,448	65,561	908	5,199	6,873	8,797	712	..
Townsville	..	..	..	..	..	..	..	..	..
Rockhampton	..	318	97	..	..	168	..	..	..
Cairns	601	2,124	523	..	..	..	..	..	..
Bowen	49	1,708	429	63,973	12,548	2,061	..	..	..
Innisfail	..	..	..	..	..	..	..	..	..
Total	149,990	11,683	163,312	70,926	20,045	13,200	8,797	712	67,658

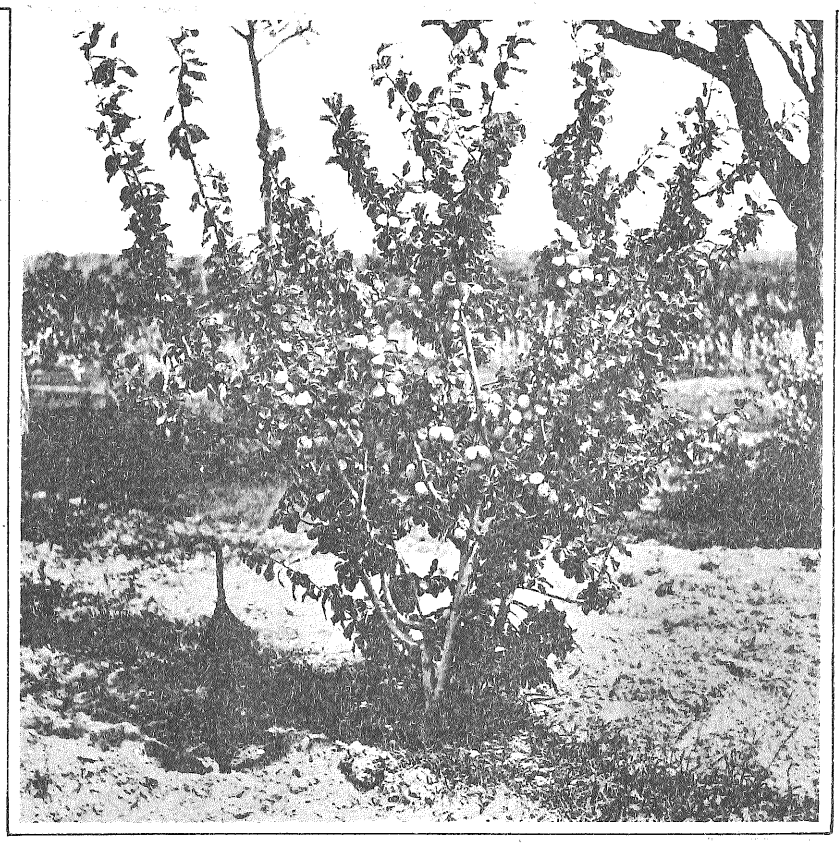
IMPORTS FOR YEAR ENDED 30TH JUNE, 1919.

District.	Fruit.	Potatoes.	Onions.	Plants.	Turnips.	Nuts.	Vegetables.
	Cases.	Bags.	Bags.	Packages.	Bags.	Bags.	Bags.
Brisbane	206,382	217,557	17,568	660	2,411	..	..
Wallangarra	94,850	39,810	16,989	152	..	..	..
Townsville	42,175	32,253	8,384	16	300	..	739
Rockhampton	11,445	29,328	6,936	109	399	..	..
Cairns	5,171	18,803	4,202	4	..	126	..
Bowen	2,931	2,260	402	6	..	..	..
Innisfail	..	596	155	..	..	..	..
Total	362,954	340,607	54,636	947	3,110	126	739

IMPORTS UNDER THE QUARANTINE ACT.

Brisbane	17,123 packages
Rockhampton	427 ,,
Cairns	919 ,,
Townsville	539 ,,

ALBERT H. BENSON,
Director of Fruit Culture.



PLUMS.

1. President Plum (Branch).

2. Avenue of Three-year-old Sharp's Early Plum.

3. President Plum.

REPORT OF THE DIRECTOR OF AGRICULTURE.

In reviewing last year's agricultural outlook, records indicate that weather conditions were not satisfactory from a productive standpoint. This fact was only too evident in the dried-out pastures and the indifferent success of the crops grown for fodder purposes during the winter of 1918, and the failure generally of several important crops which are dependent on seasonable winter and spring rains—notably wheat, barley, canary seed, and oats.

Where crops were harvested—and these, unfortunately, proved to be few and far between—a good deal of inquiry and Press comment was occasioned. Investigations, however, only served to emphasise an important factor which has been stressed on several previous occasions: that on systematically controlled cultivation areas, where supplies of soil moisture were conserved, the crops held out to a marked degree; in some instances sporadic falls of rains accounted for the success or failure of crops in a localised area, but too much emphasis cannot be given to the fact that much of the haphazard farming in vogue must give place to intelligently controlled systems of cultivation, before agriculture assumes its relatively important position to the community. Confirmation of the value of good cultivation is evidenced by the returns obtained from certain varieties of wheat at the Roma State Farm, where a yield of 24 bushels per acre was obtained on a rainfall of under 2 inches experienced during the period that the crop occupied the ground. (Ordinarily it requires equal to 4 inches of rain to pass through a crop of this character to produce a 15-bushel yield.)

The failure of the wheat and barley crops gave rise as its corollary to the necessity for something being done by the Department to make good the deficiency of seed for this year's planting. Steps were taken to purchase available supplies of acclimatized wheat in Queensland, in the Roma district; also, suitable varieties of wheat and barley, in South Australia; Mr. A. E. Gibson, Agricultural Instructor, being charged with the work of selecting the latter parcels.

The premises at Willowburn of the Downs Produce and Grading Company, and the cleaning and grading plant, were leased and put in charge of the Northern Instructor in Agriculture (Mr. N. A. R. Pollock), for the purpose of insuring that clean graded seed would be sent out. The scheme did not receive the support expected. Altogether 35,744 bushels of wheat and 15,377 bushels of malting barley were purchased; but only 14,043 and 2,751 bushels, respectively, were distributed, the balance being sold to the best advantage.

Canary Seed.—Although a limited number of crops matured and a few very remunerative returns were obtained, particularly from late-seeded areas in localities favoured by showers, growers experienced generally a severe set-back. More land than usual had been put under this crop, which has latterly found favour on account of the enhanced returns to be obtained in comparison with other crops, and from the fact that the plant is resistant to rust and has shown itself also to be well adapted to normal soil and climatic conditions here. Initial difficulties in harvesting have been practically overcome, and this can now be accomplished with up-to-date labour-saving machinery.

With the knowledge that the main canary seed crop had failed, and that another bird-seed crop would be of assistance, steps were taken last spring to procure supplies of red and white French millet for sowing purposes. Sufficient was disposed of to plant up an area of 2,000 acres. The season did not open out as favourably as wished. However, some excellent parcels of seed have already found their way on to the local market, and it would appear that the move on the part of the Department to introduce a new commercial crop will focus attention in the future on this class of millet and save sending money out of the country for a commodity which can readily be produced here.

Maize.—The extraordinary prices ruling for some time past are sufficient in themselves to indicate that all has not been well with this year's crop. Other factors and shortages of grain of various kinds have had a hardening effect on the market, but the underlying cause is undoubtedly that of a natural shrinkage due to drought conditions. In Southern and Central Queensland month after month passed by without anything more than light showers and scattered thunderstorms; and general relief was not forthcoming until late January and February, when planting operations were permissible.

A few districts in the Brisbane and Mary Valley were more fortunate as far as rain was concerned for the spring (early) planting, but the amount of grain harvested from the resultant crops proved insufficient to affect the situation; consequently all late crops (January and early February planting) were faced with the prospect of extinction in the face of early frosts. In a general sense, however, the weather proved to be favourable. Many crops were caught by frosts in exposed situations and on the flat country, particularly in the Southern inter-coastal districts, and, although the coastal areas have suffered to some extent from the same cause, some crops on hillsides above the frost line give promise of fair yields. The shortage will, unfortunately, be considerable, although high prices will assist growers to some extent. An inevitable reduction in returns from this branch of farming is manifest.

The Northern maize-growing areas offer an agreeable contrast. The crop here promises to be quite equal to former years, and an estimated return of about 25,000 tons of grain is expected. With a return to normal shipping conditions, this grain will find a ready market.

Other Crops.—References made regarding the droughty conditions which prevailed until January this year only serve to emphasise the fact that all other staple crops were adversely affected. The spring planting of potatoes practically failed, and growers who were fortunate enough to have produce to market obtained record prices.

The February potato planting season was carried on under more favourable conditions, but

high prices for seed curtailed planting operations. The crop proved to be a light one; this, taken in conjunction with the cessation of shipping supplies, has greatly forced up prices, which may even rise higher when the demand for seed lines asserts itself.

Lucerne.—The season has been anything but good for this crop, even the most favoured districts in Southern Queensland suffering. Strips of country benefited temporarily by rain during the summer months; here crops made a slightly better showing, but, generally speaking, the experience of most growers was that only one cutting was removed from paddocks from which several are usually taken during a good season.

Cotton.—In view of the excellent prices ruling for cotton in the world's markets, a systematic effort was made by Departmental officers to induce growers to plant larger areas. Had the season been more favourable, a considerable increase in the area under this crop would have been manifest. The extension of the cotton-ginning premises at the Department, and the reorganisation of the system of handling and storage of cotton, will be a decided acquisition to this section of the Department's activities.

Linseed (Flax).—Representations were made to the Commonwealth Flax Committee in Melbourne, and a ton of seed obtained and distributed in small quantities by the Department throughout the main agricultural districts. It is subsequently purposed to send representative consignments of the produce from these experimental areas for treatment to the Victorian Flax Mills to determine the quality and prospects of the Queensland-grown article.

Instructional Work as Applied to Soldier Settlers.—Frequent evidence is forthcoming of the benefit of practical advice by Departmental officers to settlers inexperienced in land settlement matters. Some assistance in this direction has already been rendered to soldier settlers; but the opinion is held that much more can be done in the way of affording first-hand information on the numerous every-day problems which the latter are called upon to face. Intelligently controlled supervision of this character will go a long way towards making a success of an undertaking which is to be regarded as a difficult one to finally solve.

Experiment and Demonstration Work in Southern Queensland.—In previous reports attention has been drawn to the character of the work undertaken by officers of this branch. Time and illustration have served to emphasize the importance of extending operations. During the year special attention has been given to lines of work calculated to increase the productivity of certain classes of crops by engaging in commercial fertiliser tests and crop variety trials, as well as carrying on the work of seed selection and improvement, which has as its corollary the testing of a wide range of seeds and the propagation of approved strains, with a view to bringing these latter into general cultivation. The season has, however, been distinctly unfavourable to much of the work in hand; nevertheless, the necessary detail has only been accomplished by the close attention and loyal assistance of the staff at my disposal. A general outline of activities is detailed:—

Potato variety trials with twenty-four varieties were carried out on two farms in the Canungra district; and fertiliser trials were conducted at Imbil, on the Mary Valley Line.

A number of promising wheats from Roma State Farm were sown last wheat season in propagation plots in the Milmerran, Pratten, Inglewood, and Goondiwindi districts; 75 acres being put under crop. Similarly, 34 acres of improved varieties of oats were sown; 400 acres were sown with different varieties of maize, and a number of "ear to row" tests carried out in conjunction with same.

Experiment plots involving small field areas were carried out with different varieties of sorghums—saccharine and non-saccharine.

Early this year a continuity of certain branches of work was arranged for, and new lines of experiment work undertaken. In the case of the former, 94 acres were sown in the Inglewood and Goondiwindi districts with special varieties of wheat, the seed from which is desired for further propagation; and small comparative tests of an assortment of varieties of wheat, named and unnamed crossbred types, are being made at nine different localities, which include places on the Downs and at Wondai and Nanango.

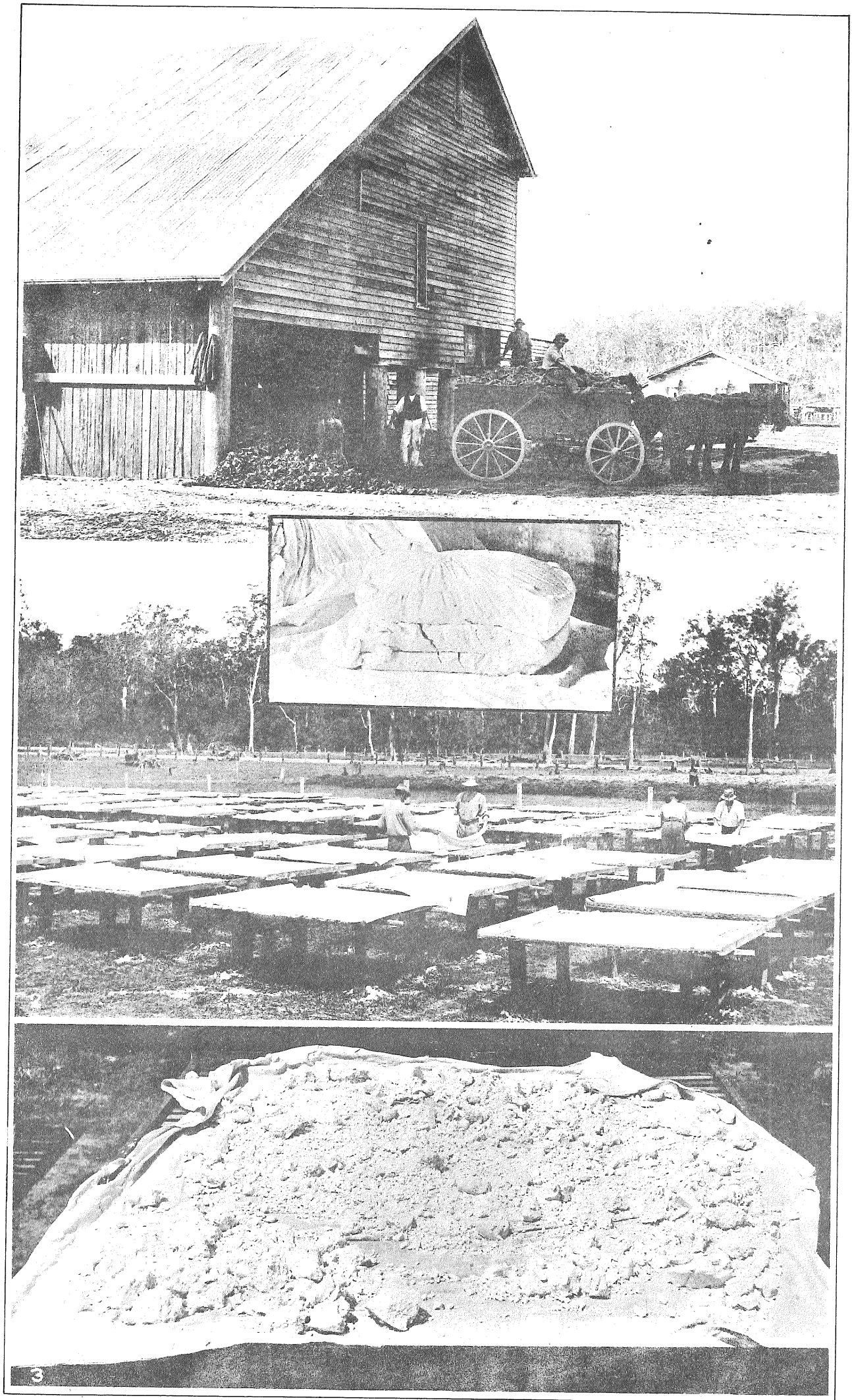
Ten varieties of barley, malting and feed types, are being similarly tested at four different centres; and this course is also being followed, in the case of oats, at Inglewood and Nanango.

At six centres—notably Kurrumbul, Inglewood, Boonah, Townshend, Veresdale, and Gleneagle—comparative tests of winter fodder crops, suitable for dairy stock, are being made; nine different combinations and classes of fodders are employed, the aggregate area occupied being 12 acres.

Crop trials for pig-raising purposes are underway in five different localities; in these tests twelve kinds of crops are being grown under identical conditions, and are calculated to provide a continuity of food.

At Mount Alford and Inglewood field trials of onions are being conducted.

Fodder Conservation.—Systematic attention was given during the year, in order to stimulate interest, by a co-operative effort between the Agricultural Instructor, Field Staff, and Dairy Inspectors. Arrangements were made for thirty-six fodder plots, aggregating 270 acres, seed being supplied by the Department. In a number of instances crops so planted failed to materialize owing to drought conditions; but where seed was held over until the summer rains, better results were forthcoming. Numbers of public demonstrations in fodder conservation were given, several being arranged for outside of the above-mentioned, where crops were available. The Kingaroy district holds pride of place as far as the number of stacks erected is concerned; the local Dairy Inspector, Mr. S. A. Crowther, estimating that thirty were put up in this district



ARROWROOT INDUSTRY, PIMPAMA.

1. View of Mill receiving Tubers.
2. View of Arrowroot Drying Trays
3. Arrowroot on Tray Drying.
4. Arrowroot as taken from Mill for Drying.

during the season. Reports already received from different parts of the State indicate that milk supplies have been kept up during the winter where cattle have been fed on ensilage, the custom being to use some hay in conjunction with it.

Seed Cleaning and Grading Branch.—The extension of premises at head office and the installation of a new cleaning and grading machine have widened the scope of work, and now admit of seeds of several kinds being cleansed of impurities and graded to a uniform sample. This is specially helpful to the Seed Improvement Branch, and has admitted of the handling of a quantity of seed for sale to farmers and to meet the requirements of experiment plots. About 17 tons of assorted seeds were treated and sent out during the year. Oversight of operations has been brought immediately under the officer in charge of the Pure Seeds Branch, and this ensures that all seeds sent out have the hallmark of purity and germinating capacity.

The Central District.—A summary of agricultural matters compiled from a report submitted by Mr. G. B. Brooks, Instructor in Agriculture, Rockhampton, indicates that, although an excess of rain and disastrous floods were experienced in the summer of 1918, the immediate result on cultivated land was excessive soil consolidation, great difficulty being experienced in preparing land for the following winter crops, which proved disappointing.

Abnormal frosts during the winter of the same year caused heavy damage to tropical growths of all kinds, which were even affected close to the seashore.

No rain of any material benefit fell between the flood rains of the previous summer and January this year—a period which then proved to be seasonably late for maize and other spring and summer growing crops.

Dairying is showing a decided improvement, the latest factory (the fifth) being erected at Wowan in a locality where abundant supplies of Rhodes grass are available. This grass, on the new scrub lands, proved to be very drought-resistant. Here dependence is placed on the grass; but elsewhere on forest country the need for winter and summer fodder and ensilage crops is so insistent that close attention has been given to crop trials to determine the most suitable for the purpose.

Comparative areas of 5 acres each were laid down with seven varieties of wheat, two each with oats and barley, also with rye and field peas and canary seed; the localities chosen being Alton Downs, North Rockhampton, Gogango, Mount Larcom, and the Boyne and Dawson Valleys. Two plots failed, and were grazed off. On the others the Macaroni wheats, Le Huguenot, and Macaroni Spring gave the best individual (5·1 tons) and average (4·9 tons) yield of green fodder per acre. Ruakura oats similarly yielded 6·9 tons and 4·7 tons; but the barleys were practically equal with 4·4 tons for Cape and 4·3 tons for Skinless as the highest individual yields. The season was too dry for the canary seed, and the rye did not germinate. Farmers showed great interest in the trials, and conceded the fact that they had previously attempted to grow unsuitable varieties.

This year's plots (1919) have been continued at six different centres, two new localities being selected—Glenmore and Marlborough.

As the pig-raising industry is showing some advancement, a series of trials of ten different kinds of crops were initiated last winter at Capella, Mount Larcom, Gogango, and in the Boyne and Dawson Valleys; but the weather proved unsuitable. However, a heavy yield of Yellow Aberdeen turnips was recorded in the Boyne Valley, where the weight of turnips aggregated 13 tons per acre, and those marketed brought £5 per ton; the total yield of turnips and tops reached 25 tons per acre. Rape also did fairly well, and gave three cuttings. The immediate result has been an extension, particularly of areas under rape; but, unfortunately, supplies of the favourite kind of turnip seed—Yellow Aberdeen—were not procurable this year.

The 1919 winter crop trials are being continued at seven different centres—Miriam Vale, Gin Gin, Barmoya, Dawson Valley, Alton Downs, Mount Larcom, and Glenmore.

Sorghum variety trials were carried out at four different places—14 different kinds of sorghum being grown. Average green fodder yields varied from 7 to 23 tons, the eight lowest returns being from grain sorghums which, although fairly good fodder plants, are of more value for raising grain for stock-feeding purposes. One extraordinary return of 36 tons per acre of Giant Honduras sorghum (non-saccharine) was obtained at Gracemere.

Maize propagation plots were continued at three different centres from a special selection of seed of "Improved Yellow Dent" harvested from a crop, which, although damaged by floods last year, gave a return of 46 bushels per acre. Two plots failed, owing to droughty conditions. The third just received rain in time to save it; this latter area was not harvested at time of writing, but the grain was of good quality and true to type.

Sweet Potatoes.—The system of cultivation and improvement of this crop has been continued, fifty-one kinds being now under observation. As rain did not come till January, it did not afford the best conditions for development. Last year's comparative tests between ten different unnamed kinds at Miriam Vale showed great differences between their yielding capacity. Computed yields per acre are as follow:—No. 3, 5·4 tons; No. 1, 8·2 tons; No. 6, 15·1 tons; No. 7, 18·4 tons; No. 2, 18·12 tons; No. 9, 19·7 tons; No. 8, 19·8 tons; No. 5, 27·10 tons; No. 4, 30·12 tons; and No. 10, 36·10 tons.

A variety trial was instituted in February at Deeford, in the Dawson Valley, with three different kinds of English potatoes; but the crops have not yet been harvested.

Onion variety tests are underway in the Boyne and Dawson Valleys, and a good germination of the seed has already resulted.

Silage Demonstrations.—Two were given this year at Archer and Mount Larcom. Farmers are being encouraged to sow late maturing sorghums to use as silage crops during the winter.

Investigations were carried out during the year in connection with the alleged spread of the prickly-pear by the scrub turkey. That the turkey was guilty of spreading the pear was not confirmed by the investigations carried out. Attention was also given to the cochineal insect and its effect on certain varieties of pear in the Central district.

The agricultural outlook at the beginning of July was, on the whole, very satisfactory; the weather had been exceptionally mild; winter crops made good headway; and pastures in most localities were all that could be desired.

NORTH QUEENSLAND.—The position of Agricultural Instructor, which has been vacant for several months, was filled by the appointment of Mr. N. A. R. Pollock, who has been engaged since April to the end of June in connection with the Departmental seed wheat distribution scheme at Willowburn.

Excellent reports were received during the season concerning the prospects of the maize on the Atherton Tableland; these have since been confirmed by an estimate of a yield approaching 25,000 tons for the district. Although parcels of grain were forwarded to Brisbane in June whilst abnormal prices ruled, the lack of quality and condition of the grain showed that it was handled before being properly fit. It is evident that conditions governing shipments of grain from Cairns are not satisfactory, and the whole subject requires to be carefully looked into. Growers now find themselves in an invidious position, owing to high freights and the shipping strike.

The distribution of Upland seed rice by the Department induced several growers to persevere with this crop, which deserves every encouragement. The season was not as satisfactory as desired, owing to the early rains being patchy. Growers have not yet had sufficient experience in growing Upland rice. It is purposed to institute variety trials and fertiliser tests in an endeavour to make this crop a more popular one, as the initial experiences already gained serve to indicate that good possibilities exist for extending operations on the Tableland forest soils. This year's "padi" crop is valued at £30 per ton.

Peanuts yielded over a ton to the acre on an experimental area near Tolga, and the prospects of raising this produce in appreciable quantities are promising.

Dairying is steadily extending on the rich scrub lands of the Tableland, and the erection during the year of another large butter factory will give a fillip to the industry.

Everything points to the pig-raising section being made a valuable adjunct to farming operations, particularly where dairying and maize-growing are carried on.

STATE FARMS.

A review of weather conditions experienced during the past year only serves to emphasise how indifferent the season proved to be.

At *Hermitage* the wheat, barley, and oats crops sown for the purpose of raising seed supplies for farmers failed; but with a few light showers in spring several seasonable crops were planted, including cowpeas and field crops of Canadian Wonder and haricot beans, which made fair progress.

A quantity of different kinds of milo and other sorghum seed was disposed of for sowing purposes to cater for the shortage in Queensland-grown farm seeds.

Sheep were used to advantage on the farm lands, and afforded good returns from sales of surplus stock and fat lambs.

At *Roma* the technical work of wheat-breeding and the various experiments involved with fertilisers furnished some interesting data; the results served to emphasise the value of systematic cultivation and of conserving soil moisture, as crops were raised on less than 2 inches of rain, some returning a 24-bushel yield. Practical results of this character would be given wide significance in any country outside of Australia, and this fact was stressed by the members of the French Commission, who seemed much impressed with the scope and character of the experiment work and results accomplished at this Farm.

Returns from lucerne during the dry season were also striking by reason of the fact that, notwithstanding drought conditions, five successive cuttings were taken off a patch of alluvial land; but these were only secured by fallowing the land prior to seeding down the area and through the cultivation given after each "cutting" was removed.

The lemon trees in the orchard made excellent growth, and set a fine crop of fruit, much of which, unfortunately, dropped owing to development being checked at a critical time through lack of sufficient moisture.

At *Warren* the weather conditions were unsatisfactory, only 14·03 inches of rain being recorded for twelve months—July to June; less than half the usual complement. Probably the most trying period was for the twelve months prior to March this year, only a trifle over 6 inches being recorded. Although 150 tons of ensilage and some 20 odd tons of hay had been provided, this was insufficient to meet the abnormal demand for fodder, and recourse had to be made to the mowing of old pastures to supplement supplies of green cow-cane—a crop which stood by remarkably against the drought.

Soudan grass also proved to be exceptionally drought resistant and hardy—in fact, no other crop on the place showed to better advantage. Sown in September, it was grazed off five times, cut for hay once, and subsequently a 5-ton crop to the acre was put away in the silo.

The manager's eulogy on the Ayrshire as a breed is well worth recording:—"The Ayrshire breed has again demonstrated in an unmistakable manner its hardihood and adaptability to capricious climatic conditions. We have animals in milk at present which calved last August and September and battled through the dry spell, and our return last month from twenty-four cows milking was a record since the inception of the farm. I am quite convinced of the suitability of the Ayrshire for the Central district, and am not to be led away with the dual-purpose argument in regard to other breeds."

Improvements have been effected in the way of a new 100-ton reinforced concrete silo, the farm now being equipped with twin silos of this description.

An excellent demand has been experienced for Berkshire pigs, and this is to be taken as evidence of the increasing popularity of pig-raising on dairy farms in the Central district. Keen inquiry has been maintained for Ayrshire females for dairying purposes.

Gindie has passed through an exceptionally dry year, only 8·37 inches being recorded. Bush fires did a conspicuous amount of damage, and practically swept this section of the country, which seriously curtailed natural feed for the stock. Good supplies of ensilage both in the stack and in the silo proved invaluable. Similarly to Warren, another 100-ton reinforced concrete silo was added during the year—a circumstance which will enable ample reserves of fodder to be put by in the future for stud stock. The increase in the stud Shorthorn herd has been well maintained, and 20 young bulls are now (June) being handled and prepared for sale. The demand for good quality animals has been well maintained; and sales of several youngsters were effected at the last Emerald Show, where buyers had a chance of purchasing at auction.

A notable circumstance during the year was the purchase of 100 odd of purebred heifers from the well-known Belltrees Shorthorn herd in New South Wales, which has a record of over half a century of pure breeding. This will add prestige to the Gindie Farm stock, and places the institution on the soundest possible footing in the way of high-class foundation stock.

The flock of merino sheep—slightly over a thousand—has been improved by the use of Southern-bred rams with selected ewes. Dipping experiments with Royal dip have been continued, but complete freedom from fly was not attained throughout, as the Farm experienced a "wave" of fly infestation in the latter part of the year; sheep were crutched and dressed, and the portion of the flock due for its second dipping was treated with a view to minimising the attack.

The Suffolk stud is steadily increasing, and animals have held their own under trying conditions.

Farming during 1918 proved disappointing, over 50 acres being sown with wheat, maize, Soudan grass, and panicum; but everything failed through lack of moisture, except 11 acres of wheat cut for hay. Two cuttings were obtained from 6 acres of milos sown in 1916, which have unmistakably demonstrated their ability to yield under the most trying climatic conditions.

Several minor improvements have been effected to facilitate the handling and care of stock.

The prolonged drought and heavy frosts are causing general uneasiness in the district, and stock movement to relieve the country is general.

The *Kairi Farm,* although affected by unfavourable weather to some extent in the late winter and spring, has since experienced a good season.

The whole area of felled country, about 400 acres, which was brushed and resown with grass last year, soon responded, and the carrying capacity improved almost immediately. The Jersey stud stock have shown a steady increase, and as opportunity offered certain animals were sold to make room for those of better quality, which now constitute the herd. As the embargo against exhibiting has been lifted since the War, exhibits of stock have been made at two shows, resulting in a maximum share of prizes, including a milking competition (single entry), which was won with a return of slightly under 19 lb. of butter for the week. The result of exhibiting cattle soon effected the sale of several young bulls, the quality of the stock having made a favourable impression at the different shows.

The stud of Berkshire pigs was resuscitated by the introduction of a number of Southern and New Zealand bred animals. Improvements and conveniences for handling have been instituted, it being purposed to push this important branch as much as possible to meet the insistent demand for breeding stock.

Twin reinforced concrete silos erected last year were filled, and the fodder proved to be of inestimable value; about 40 tons of sugar-cane, blown down by the cyclone and put through the cutter and into the silos, turned out to be excellent ensilage, and was relished by stock.

The rearrangement of horse yards and erection of substantial fencing adjoining the farm buildings have effected a much-needed improvement.

In conclusion, I would like to express my thanks to the staff for their loyal assistance and the close attention given to their duties.

H. C. QUODLING.

REPORT OF THE CHIEF DAIRY EXPERT.

SIR,—I have the honour to submit herewith a report upon the dairying industry for the year 1918-19.

In a general sense the season under review is not to be accepted as being favourable from a dairying viewpoint insofar as weather conditions are concerned. The spring and summer months passed over without providing sufficient rain to permit of the growth of pasture or crops for the dairy herds, and as a consequence the production of milk on the dairy farms was appreciably decreased, and the output of butter and cheese factories fell below normal in quantity. Fortunately, general rains were enjoyed in all districts before the winter set in, and abundant pasture became rapidly available for the dairy stock; and the yield of milk improved materially in quantity—in fact, it is doubtful whether the winter production of dairy foodstuffs was ever higher than it was this season.

Had the droughty conditions of the early portion of the year continued much longer through the season, serious results would have followed, and heavy losses in dairy stock would have occurred in many districts before the winter had terminated.

Naturally, the influence of a "dry spell" is reflected in the aggregate production of milk upon the farms, and, in comparison with the former season, it is found that the shrinkage this year in the complement of the milk yield is 17,803,931 gallons; the figures for the respective years being as under:—

Year.	Quantity Milk Produced. Gallons.
1917-18	105,384,029
1918-19	87,580,098

Decrease for the latter year being 17,803,931 gallons.

The milk produced was utilised for domestic purposes, and in the production of butter, cheese, and condensed milk; the production of butter claiming most of the total amount of the milk raised.

Despite the fact that the season was not altogether favourable, additional factories were erected, and increased numbers of both cheese and butter factories commenced operations during the year; while many of the established manufacturing companies found it necessary either to build new premises or to substantially increase the capacity of factories which were in operation under their control. These conditions are indicative of a continuance of the expansion of the industry.

An increase annually takes place in the number of butter factories installing the plant and equipment necessary for the pasteurisation of the cream supply, and the indications are that in the immediate future few factories will be found that do not carry out the pasteurisation of the cream by one or other of the recognised methods (flash or batch system).

For some years past the neutralisation and pasteurisation of cream has been strongly advocated by this office; and the quality of the butters manufactured from cream that was effectively pasteurised proves that pasteurisation is advantageous, and considerably adds to the keeping properties of butters made from cream so treated, the results being especially favourable when applied to butters intended for export, and that are incidentally held for comparatively lengthy periods in cold storage.

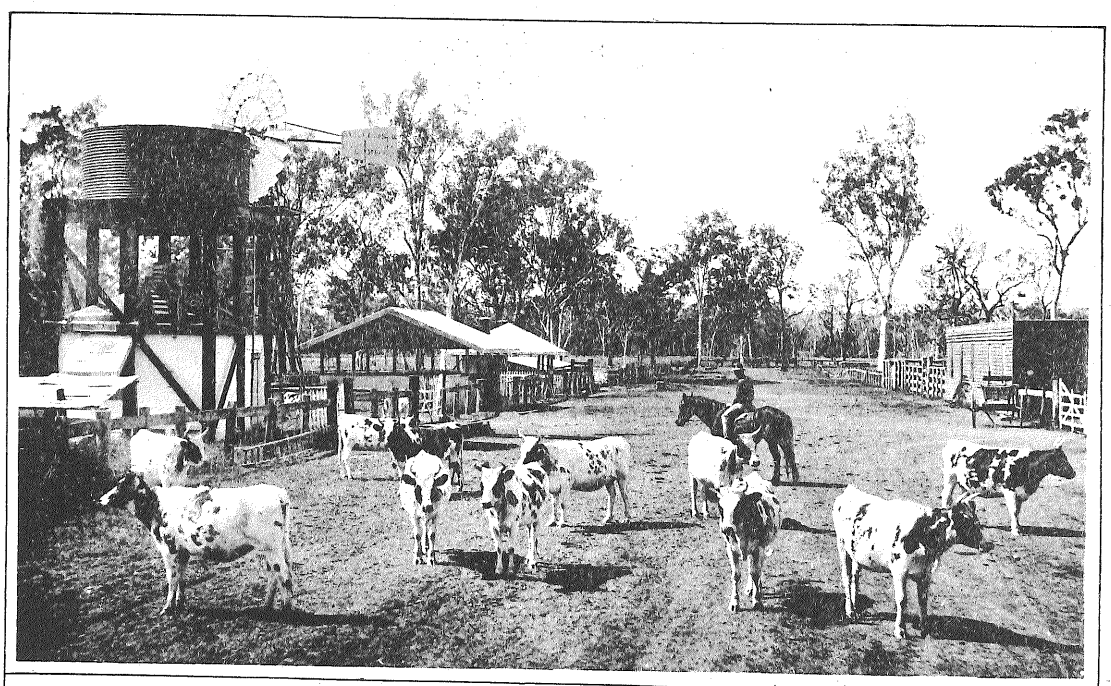
The butter production was adversely affected by the "dry" weather conditions prevailing in the season 1918-19. The year 1917-18 is credited with the production of 38,930,690 lb. of butter; but in 1918-19 the complement of butter manufactured is set down at 32,371,575 lb., or a decrease of 6,559,115 lb. This shrinkage is also reflected in the number of boxes of butter submitted for examination prior to export. The records show that during the year ended 30th June, 1918, 249,591 boxes of butter were examined by the grading officers, while the number fell to 145,530 boxes for last season, the difference representing a decrease of some 10,482,822 lb. in the complement of butter presented for classification as compared with the former year.

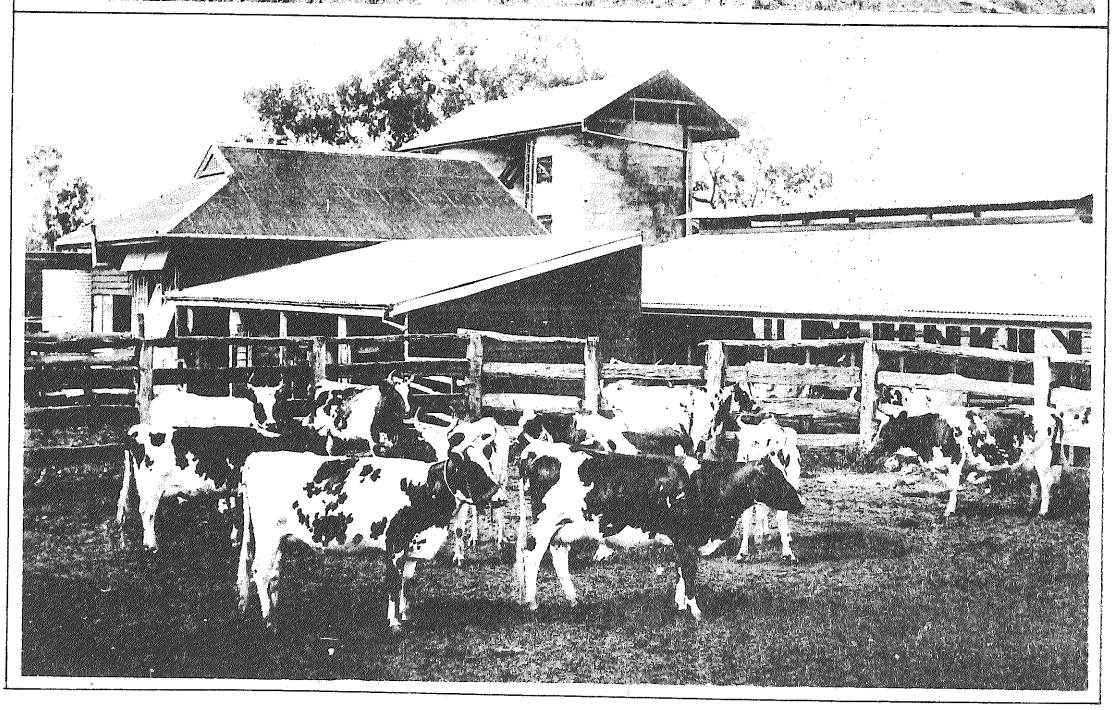
The production of cheese was also depressed. The production in 1917 stood at 11,142,114 lb; and for the year 1918 it is found that the quantity of cheese maunfactured was 8,636,700 lb.—a decrease of some 2,505,414 lb., as compared with the former year. The volume of the export trade in cheese was reduced as a result of the lesser quantities of the commodity manufactured; and for the year ended the 30th June last the amount of cheese submitted for examination was some 21,600 crates less than was the case for the year 1918.

In the absence of fuller attention by dairy farmers to the matter of conservation of supplies of fodder for the dairy stock, it is to be expected that the production of dairy foodstuffs will decrease upon each occasion that adverse conditions of the weather occur. Ensilage appears to be growing steadily in favour, but the construction of silos is taking place much slower than the importance of fodder conservation demands; and at the existing rate of progress it will be some considerable time before it can be claimed that satisfactory supplies of fodder have been provided for upon the dairy farms. When a stage is reached where every dairy farmer is operating his farm supported by the silo filled with ensilage, it will then be safe to consider that the dairying industry is resting on a sound foundation and placed in a flourishing position with comparative disregard to the visitation of "dry spells" which manifest themselves from time to time.

The full force of post-War influences upon the dairying industry is not easy to gauge; but there are readily discernible factors at work that indicate that a strong demand for dairy foodstuffs will continue for sometime to come, and the competition of oversea countries for supplies of butter, cheese, &c., will undoubtedly sustain the price for these commodities at a comparatively high level.

The outlook is that the cost of producing, manufacturing, and marketing dairy products will be increased somewhat. Consequently, in order to maintain the industry upon a remunerative footing, it is necessary that the production be increased as fully as possible.





1. Ayrshire Heifers. 2. Clydesdale Horses on Creek. 3. Some of the Dairy Cattle in Yard.

The evidence to hand is confirmatory that, as a result of the War, great havoc has been wrought amongst the dairy herds on the Continent of Europe, and acute disorganisation of the industry has spread throughout Siberia; consequently, many of our former competitors will be obliged to carry on for some years with herds decimated in numbers. Denmark, Holland, Belgium, Sweden, Norway, France, Germany, Italy, and Siberia have all suffered through the War in the direction of having their dairy herds reduced in numbers. The misfortune of these countries offers a splendid opportunity for the dairy farmers of Queensland to improve their position in the world's markets, and with intelligent development of the industry at their hands satisfactory monetary returns from the sale of dairy products seem assured.

None of the European belligerents have come through the War more favourably than Australia as far as dairying is concerned; and, although dairying countries situated in North and South America scored heavily over the Commonwealth throughout the War in the matter of prices realised for their products, it is hoped that an adjustment of prices will soon be made on a basis that will allow the dairy farmers here to enjoy prices upon a parity with those ruling in Great Britain, or at least in keeping with the f.o.b. rates paid for dairy foodstuffs purchased by Great Britain from other countries, which to date have not had to offer products of higher quality than those exported from this State. The comparatively higher rates paid for dairy products in other countries was given under the pretext that the countries concerned were situated closer to Great Britain, and, consequently, their products were more readily available and did not involve similar difficulties of transport as happens in the case of exportation of produce of Queensland origin. However, now that the War has terminated, it is only reasonable to expect that the channels for the disposal of dairy foodstuffs from Queensland should be opened, and the products left to command the highest prices offering. The imposition of restrictions upon the disposal of dairy products is not equitable, and, if unduly insisted upon, will go a long way to retard the expansion of the industry here, which for economic reasons it is so highly desirable should be encouraged.

The systematic testing of the butter-fat content of the milk of individual cows comprised within the dairy herds was continued throughout the year. Unfortunately, quite a number of dairy farms considered that the unfavourable nature of the season detracted from the value of the test results as a guide to the productiveness of a dairy cow, and for this reason they withheld their cows from the test. However, in some districts the dairymen appear to be gaining in their desire to submit their cows to the test; and, as a result of this, a fair complement of work was carried out by the Herd Testing Officer, principally in the Kingaroy district.

The importance of herd testing is becoming more deeply impressed in the minds of dairy farmers; and a reversion to normal weather conditions will, I think, be the means of bringing many herds under submission of the tester, which is still to be recognised as the only reliable method of determining the value of a dairy cow as a producer of butter-fat.

E. GRAHAM,
Chief Dairy Expert.

REPORT OF THE CHIEF INSPECTOR OF STOCK.

SIR,—I have the honour to submit the following report for the year ended 30th June, 1919:—

The seasons of recent years have been abnormal, the rainfall being excessive in the summer of 1918, followed by unusually dry intervening periods. The wet season last summer was not general, patchy thunderstorms only being experienced at intervals, in lieu of the continuous soaking rains looked for during our summer months. The seasonal peculiarities were responsible for extensive grass fires over very large areas, and the country burnt cannot recover until soaking flood rains fall. These various conditions have occasioned a shortage of agistment for stock throughout the State, which was accentuated by the large number of stock brought from New South Wales to Southern Queensland in search of pastures, owing to prevailing drought conditions in that State.

The markets for stock have been considerably restricted, due in a measure to the scarcity of water and feed on the main stock routes, more particularly those from the Northern Territory and North-west Queensland, which prevented the movement of the usual large number of stock towards the South.

The drought in New South Wales limited the demand from that State for Queensland stock, and the oversea export of meat has been restricted by the shortage of shipping owing to the European War, and to industrial shipping troubles.

Notwithstanding the fact that heavy drought losses have not been recorded during the period under review, the numbers of our flocks and herds have not increased as they should have done proportionately to the facilities which exist for expansion.

There has only been a very slight increase in the number of stock for a very considerable period, which cannot be attributed solely to unfavourable seasons; and conclusions point to the increase of pests inimical to the prolific breeding of stock as a contributory factor towards the shortage.

The attention of those engaged in pastoral and dairying pursuits should be directed to the causes, and efforts should be made by them towards minimising preventible losses in stock.

Whilst it can be conceded that there will always be periodical losses from seasonal effects, there is, nevertheless, an annual loss arising from pests and disease which can be lessened by concerted and combined co-operative action on the part of stockowners, particularly in regard to dingoes, the blow-fly pest, cattle ticks, pleuro-pneumonia, worms in stock, and the spread of noxious and poisonous plants—each of which occasions heavy mortality amongst breeding and young stock.

This Department places its services at the disposal of all stockowners, but it is futile unless full co-operation is obtained in supporting the laws and regulations provided to deal with the suppression of disease in stock.

In the interests of stockowners, it is necessary that amendments should be provided in the Stock and Noxious Plants Acts, to make provision for heavier penalties where breaches of the Acts and Regulations are committed, and to compel Local Governing Bodies to take greater interest in the suppression of pests and the amelioration of stock diseases and the destruction of noxious weeds within their area. Local Authorities should promote greater facilities for adequately watering stock routes, and protecting roads and reserves from grass pirates and straying stock.

STOCK STATISTICS.

The following figures, supplied by the Government Statistician, show an increase in the number of horses, cattle, and sheep on the returns of the previous year, and a decrease in the number of pigs:—

Year.	Horses.	Cattle.	Sheep.	Pigs.
1919	759,726	5,786,744	18,220,985	140,966
1918	733,014	5,316,558	17,204,268	172,699
Increase ..	26,712	470,186	1,016,717	..
Decrease ..	..	..	..	31,733

HORSES EXPORTED.

Three thousand two hundred and fourteen (3,214) horses were exported.

ANALYTICAL EXAMINATIONS.

Thirty-seven (37) samples of viscera and contents were analysed by the Agricultural Chemist; in thirteen (13) cases the analyses revealed the presence of poison.

In North Queensland twenty-four (24) samples were analysed; in nine (9) cases poison was detected.

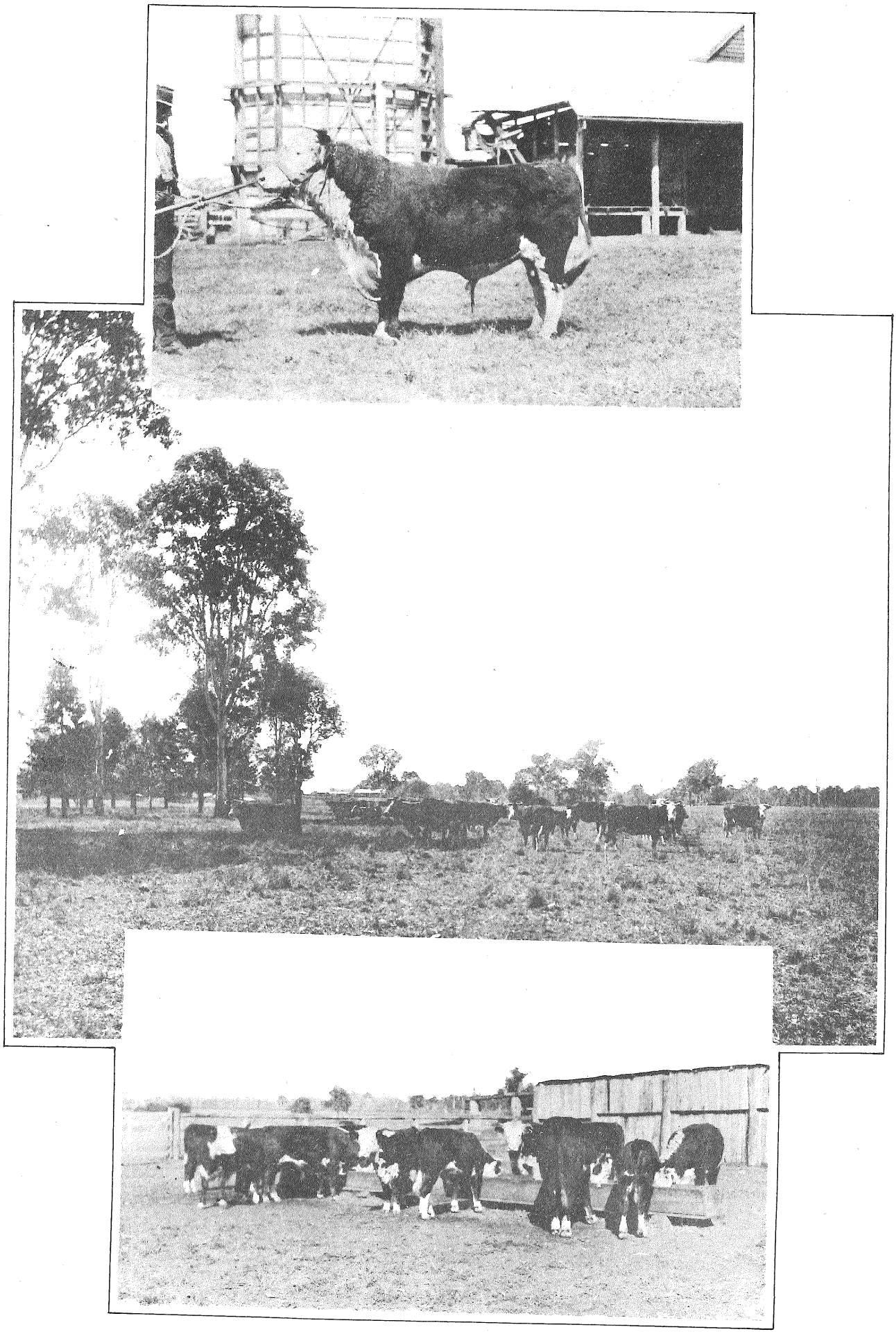
PROSECUTIONS.

	No. of Prosecutions.	No. of Convictions.
Diseases in Stock	115	113
Slaughtering Act	36	35

In addition, there were a number of convictions obtained by police officers for breaches of the Acts.

EXAMINATION OF STALLIONS.

One hundred and ten (110) stallions were examined, of which number fourteen (14) or 12·7 were rejected.



HEREFORD STUD CATTLE—CRESSBROOK, TOOGOOLAWAH.

Tabulated results of the examinations are as follow:—

	Draught Horses.		Blood Horses.		Light Horses.		Ponies.		Totals.	
——	Number Examined.	Number Certificated.	Number Examined.	Number Certificated.	Number Examined.	Number Certificated.	Number Examined.	Number Certificated.	Number Examined.	Number Certificated.
	32	26	33	28	14	13	31	29	110	96
Defects.	Number Rejected.	Percentage Rejected.	Number Rejected.	Percentage Rejected.	Number Rejected.	Percentage Rejected.	Number Rejected.	Percentage Rejected.	Number Rejected.	Percentage Rejected.
	6	18·75	5	15·15	1	7·14	2	6·45	14	12·7
Sidebones ..	4	12·5	..	..	..	..	..	..	4	3·6
Ringbones ..	1	3·125	..	..	..	..	1	3·225	2	1·8
Spavin	..	..	4	12·12	..	..	..	..	4	3·6
Curb	..	..	..	..	..	..	1	3·225	1	·9
Want of type and conformation	..	..	1	3·03	1	7·14	..	..	2	1·8
Whistler or roarer	1	3·125	..	..	..	..	..	..	1	9
Totals ..	6	18·75	5	15·15	1	7·14	2	6·45	14	12·7

Diseases of the Horse.

Horses have been free from serious epizootic diseases, but the following have been noted whilst investigating various reported ailments:—Strangles, influenza, tetanus, purpura haemorrhagica, vegetable and mineral poisoning, and "walk about" disease. The latter disease was reported in February to exist in the neighbourhood of the Gilbert River. Arrangements were made for Veterinary Surgeon McGown, who was stationed in Townsville, to proceed to that centre and investigate. Upon arrival he discovered that the disease was not very prevalent—as, after touring the district for over a week, he was only able to find one case. The disease is not prevalent in dry weather, but makes its appearance after rain. The *ante-mortem* symptoms usually exhibited by an animal are those of incomplete paraplegia or partial paralysis due to disease of the spinal cord. The animal loses control of either fore or hind quarters, and walks about in a dazed and uncertain manner. The lesions found upon *post-mortem* examination by Veterinary Surgeon McGown were:—Stomach slightly inflamed and impacted, and when opened a strong pungent odour was emitted. Liver dark in colour, otherwise normal. Brain, meninges congested; spinal cord atrophied. Spinal canal filled with a thick yellow jelly-like substance. The veterinary surgeon was of opinion that the cause of death in these cases was cerebro-spinal meningitis due to eating some poisonous plant. Arrangements will be made for feeding experiments to be carried out as soon as the Veterinary Staff is complete.

Tick Board.

During the year under review the volume of work carried out by the Board has been very considerable, and the results achieved have been of distinct advantage to the pastoral industry of the State, and of primary importance to stockowners who have benefited by the action taken to control the spread of the tick and limit its incursions into clean areas. Much educative work was needed amongst stockowners, in order to impress upon them the urgent necessity for the erection of dipping facilities to cleanse herds in grossly infested areas, and to provide for the disinfection of travelling stock through these areas and from infested or suspected holdings to clean country. As a result of the activities of the Board in that direction, many private and co-operative dips have been erected, especially in Northern and North-western Queensland, where their necessity was so apparent. Strenuous efforts were made to secure co-operation of the Local Authorities in the various infested districts, and especially in districts where sporadic outbreaks have occurred; and these efforts were partially successful, although it must be noted with regret that in some instances Shire Councils have shown a disinclination to respond to the appeal of the Board.

In at least one case an antagonistic spirit was displayed, which has tended to greatly retard cleansing operations within a portion of the area of the Shire concerned. Until stockowners are seized with the fact that the Board is not dealing with the matter from an individual standpoint, and realises that the control of the tick pest is one of national importance, the difficulties of carrying out a definite policy will be considerable. Latterly it is noticeable that owners are now giving credit to the Board for tangible results.

In pursuance of the policy to establish dipping facilities at important trucking centres and crossing places on the Queensland Northern Railway from Prairie to Kajabbi, dips have been erected to the order of the Board by the Railway Department, and are now in commission at the following centres:—

Prairie, Richmond, Julia Creek, and Cloncurry.

A Government Dip is also in commission at Hughenden, and another is in course of erection at Kajabbi. In recognition of the policy to provide dips on the principal stock routes at suitable intervals, a dip was also erected by the

Government at Donor's Hills, which, in conjunction with the Sedan Dip, will afford facilities for owners to cleanse stock travelling from Gulf districts to the Queensland Northern Railway trucking centres. Dips are now in use and available for travelling stock in Gulf areas at Lawn Hill, Punjaub, Gregory Downs, and Augustus Downs.

A matter of paramount importance in any definite policy for tick control and eradication in this State is the necessity for close supervision and the imposition of necessary restrictions on the introduction of stock from the Northern Territory. The late Administrator of the Territory (Dr. Gilruth) met the members of the Board on the 5th September last to discuss the question, and pointed out that there were at present dips in operation on the main stock route through the Territory to Queensland—at Anthony's Lagoon, Brunette, Rankine, Austral Downs, and Lake Nash—and that provision would also probably be made for erection of others at Avon and Alexandria; thus supplying a continuous chain of dips to the Queensland Border. To further provide for cleansing facilities on the Camooweal to Cloncurry route, a dip is being erected by co-operation of stockowners at Yelvertoft.

The provision of dips at Herbert Vale and Rocklands is required before the movement of stock from the northern by the nearest direct route on the eastern side of the Border can be authorised; but, owing to unaccountable delays, the Rocklands Dip has not yet been placed in commission.

Owners in the Cook and Cairns districts have responded to the efforts of the District Stock Inspector, and many dips have recently been erected in that portion of the State. By this means provision is made for minimising the pest on grossly infested runs and for the cleansing of the stock routes leading to the Biboohra Meatworks. Dips are in use for the latter purpose at Carpentaria Downs, Christmas Creek, Gunnawarra, Lake Lucy, Wrotham Park, Abingdon Downs, Marslands, and Islands Outstation.

Efforts of the Board throughout the year were directed to the cleansing of the Warwick, Boulia, and portion of the Toowoomba areas; and the policy adopted has enabled these areas to be declared free from ticks and restrictions removed. A strict quarantine on the movement of stock into or through the Boulia area was imposed, and as a result stock within the area were not open to the danger of reinfestment. A dip was erected by the co-operation of the stockowners at Cooridgee Waterhole, in the vicinity of Boulia; and cleansing facilities were also provided at Noranside and Warenda. In view of the success attendant upon the efforts of the Board and the co-operation of stockowners to clean up the area, the proposal for the erection of a dip at Elizabeth Springs was not carried out, but a stock reserve has been established there.

In view of the extension of the tick pest to an area south of the Queensland Northern Railway, and of which Mackinlay is the centre, efforts are now in progress to eradicate the pest, and an inspector will be stationed at Mackinlay for the purpose of carrying out an energetic patrol in the district bounded by the Queensland Northern Railway on the north-eastern boundary of Eddington and Toorak on the east, the Selwyn Range on the south, and thence by the Selwyn-Cloncurry Railway to Cloncurry.

Although Winton is now considered free of ticks, the Elderslie route must still be classed as suspected; but, to prevent reinfestment of that area, arrangements have been made for the appointment of an inspector of stock at Kynuna Dip to supervise the dipping of travelling stock by Southern routes, which is now compulsory. Until the whole of the Winton area can be declared clean, dipping restrictions on the movement of stock from that centre to clean country must apply.

The Aramac area is still infested, and a southerly and south-westerly extension of the quarantine boundaries was found necessary. It is hoped, however, that with the provision of dipping facilities at Hughenden and Prairie, and the recent erection of private dips on routes between the Queensland Northern Railway and Aramac, the infested country will be freed from the pest. The efforts of the Board will be directed to that end, as an extension of the infested area to centres south of the Queensland Central Railway would probably be accompanied with disastrous results. The Aramac and Jericho Councils have in a public spirit cooperated with the Board; and dips at Aramac, Jericho, and Alpha are now in commission under their control. Dipping facilities are also provided at Barcaldine; and privately-owned dips are in use on the routes between Prairie and Aramac at Curragilla, Bogunda, Lammermoor, Oakley, Holmleigh, Ellwell, Birricania, Needlewood, and Tower Hill.

The recent outbreak of ticks on the Longreach Common, and the source of which cannot at present be definitely ascertained, has necessitated the quarantine of the reserve and the periodical spraying of stock depasturing thereon, and moving therefrom to clean areas. The difficulties experienced by the local inspector and his assistants in obtaining the assistance of the Local Authority relative to the cleansing of stock are deprecated, and are likely to prolong the period of quarantine

During November last I, in company with Mr. Bunning (a member of the Board), paid a visit to the Northern and North-western areas of the State, when we fully discussed matters incidental to the policy of the Board with officers in the various centres visited. Stockowners were also met, and the proposals for undertaking the work of tick control were dealt with. The question of the restrictions on travelling stock from the Northern Territory and Gulf districts, and the policy of the Board, were discussed with owners, and received appreciative endorsement by those most vitally interested.

Cleansing Areas.

Helidon Area.

During the year a portion of this area, comprising 57 holdings, approximating 10,000 acres in area, was declared free from ticks, and the dipping restrictions removed:—

Holdings inspected	3,364
Horses inspected	18,671
Cattle	101,281
Sheep	122
Holdings found infested	387
Stock dipped	20,513

STOCK MOVEMENTS.

ENTERED DISTRICT.			REMOVED FROM DISTRICT.			MOVEMENTS IN DISTRICT.			STOCK DIPPED.		STOCK SPRAYED.	
Horses.	Cattle.	Sheep.	Horses.	Cattle.	Sheep.	Horses.	Cattle	Sheep.	Horses.	Cattle.	Horses.	Cattle.
2,597	3,650	45	3,877	9,211	130	3,804	26,923	30	3,468	18,616	95	1,150

South Burnett Area.

A very severe winter was experienced, with a late spring, followed by drought conditions, which lasted well into the autumn months. Owing to these adverse circumstances, the cattle were in low condition and could not be handled; consequently, the inspection of stock on holdings and regular compulsory dippings were relaxed during the winter months. Patrol work and paddock inspections were carried out where possible; but no ticks were observed during this period, owing largely to the dry climatic conditions unsuitable for tick development and to the extensive bush fires that swept the district. It was not until the autumn months that rain relieved the situation, when the country quickly responded, and fair grass and herbage were available. The condition of stock improved, and the usual cleansing work was again resumed. Only a few ticks were found on isolated holdings, but they soon disappeared with regular dippings.

In the Kingaroy portion of the area, ticks were found only on a few holdings; and the Nanango portion is rapidly showing the good results of cleansing work. Ticks were found chiefly in the parishes of Booie and Johnstown. In the area along the Main Range from Cooyar to a point near Jandowae, containing approximately 80,000 acres and carrying about 10,000 cattle, no ticks were found, as the pest had been eradicated during the previous year's operations; and this condition of affairs is most important, as the area referred to adjoins the Darling Downs, and thus affords great protection as a buffer area. This gratifying result was due mainly to the full co-operation of stockowners who were anxious to eradicate the pest:—

Holdings inspected	431
Horses inspected	801
Cattle inspected	29,329
Holdings found infested	26
Cattle found infested	112
Horses found infested	Nil
Cattle dipped	43,859
Cattle sprayed	159
Horses dipped	461

STOCK MOVEMENTS.

ENTERED DISTRICT.			REMOVED FROM DISTRICT.			MOVEMENTS IN DISTRICT.		
Horses.	Cattle.	Sheep.	Horses.	Cattle.	Sheep.	Horses.	Cattle.	Sheep.
1,828	11,540	490	1,778	20,656	550	21,401	225,496	405

Miles-Chinchilla Area.

This embraces an area commencing on the Western Railway at Broadmead Railway Station, and bounded thence by the west and north-west boundaries of portion 228, parish of Macalister, by the north-west boundary of portion 226, by the south-west boundaries of portions 26, 12, and 13, parish of Tully, by the west boundary of portion 13, by the north-west boundaries of portions 7 and 6, parish of Tully, and 17, parish of Cooranga, by the north boundary of portion 18, by the west, north, and north-east boundaries of portion 10, by the north-west boundary of portion 5, by the Jandowae Branch Railway north-westerly to the southern boundary of the parish of Jandowae, by the southern, eastern, and northern boundaries of that parish, by the eastern and north boundaries of the parish of Jingi Jingi, by the south-west boundary of portion 63, parish of Burraburri, by the north-west boundaries of portions 63, 67, 68, 70, and 71, by the road intersecting portion 14, parish of Delger, and by the east and northern boundaries of that parish, by the north-east boundary of the parish of Bembil, by the Great Dividing Range westerly to the road from Chinchilla to Juandah, Clifford, and Durham Downs, by that road westerly to the north-west corner of portion 17, parish of Golden, by a road along the western boundaries of portions 17 and 16 and passing through portions 19, 21, 22, and 23 south-westerly to the northern boundary of the parish of Sollow, by the northern and western boundaries of that parish again to the Great Dividing Range, by that range easterly to the north-east corner of the parish of Bogandilla, by the eastern boundaries of the parishes of Bogandilla and Dulacca to the Western Railway; and thence by that railway easterly to the point of commencement.

This district, although only slightly infested, with the infestation confined to certain localities, has been subject to restrictions on the movement of stock in a southerly and westerly direction for a number of years. At the request of stockowners the work of eradication was commenced in March last.

Holdings inspected	478
Horses inspected	2,215
Cattle inspected	31,311
Sheep inspected	1,218
Holdings infested	3
Stock dipped	10,018

Tallebudgera Area.

During the year twelve (12) animals were found tick-infested in the Coolangatta portion of the area. Regular dippings were carried out, but, as cattle are still able to stray from the town area, reinfestation takes place. The fence referred to in the last report was erected with the exception of gates, but, owing to severe weather conditions, the portion running into the sea was broken down. It has now been decided

to re-erect a different style of fence, which it is anticipated will meet the requirements. During the year 24,817 cattle and 1,942 horses were inspected on 546 holdings on the area. The following figures show the movement of stock in connection with the Tallebudgera district:—

STOCK MOVEMENTS.

ENTERED DISTRICT.			REMOVED FROM DISTRICT.			MOVEMENTS IN DISTRICT.			STOCK DIPPED.		STOCK SPRAYED.	
Horses.	Sheep.	Cattle.	Horses.	Sheep.	Cattle.	Horses.	Sheep.	Cattle.	Horses.	Cattle.	Horses.	Cattle.
340	3,091	4,675	292	3,549	630	86	4,745	41	6	1,776	19	..

DIPS.

The number of dips registered in the State totals 3,623. Particulars of dips registered in the various stock districts are as follow:—

Stock District.	Number.
Barcaldine	4
Bowen	180
Brisbane	953
Cairns	147
Clermont	42
Cloncurry	18
Cooktown	31
Gladstone	280
Hughenden	29
Maryborough	1,128
Normanton	22
Rockhampton	408
Roma	37
Springsure	47
Toowoomba	76
Townsville	187
Warwick	32
Winton	2
	3,623

The above numbers, although correct according to registrations, are not complete because many stockowners have failed to register their dips. It is very doubtful if the information required will be obtained until prosecutions are instituted. A portable dip tester has been supplied to the various Stock Inspectors, and it is also available for purchase by any dip owner. It is a simple apparatus, easily carried, and has been found most serviceable. An inspector is now able to analyse a dip fluid in a few minutes, instead of waiting some days, or may be weeks, to get the result of analyses from Brisbane or Townsville.

Particulars concerning analyses of dipping fluids in Southern and Central Queensland will be found in the report of the Agricultural Chemist. In North Queensland eight hundred and seven (807) dipping fluids were analysed; 1·4 per cent. contained less than 2 lb. of arsenic—

2·6 per cent. contained 2 lb. to 4 lb.	of Arsenious Acid (AS_2O_3) per 400 gallons.
9·9 per cent. contained 4 lb. to 6 lb.	
15·1 per cent. contained 6 lb. to 7 lb.	
16·6 per cent. contained 7 lb. to 8 lb.	
18·4 per cent. contained 8 lb. to 9 lb.	
14·0 per cent. contained 9 lb. to 10 lb.	
22·0 per cent. contained 10 lb. and over	

of which—

7·3 per cent. contained 4 lb.	of Arsenious Acid (AS_2O_5) per 400 gallons.
1·1 per cent. contained 3 lb. to 4 lb.	
2·4 per cent. contained 2 lb. to 3 lb.	
1·4 per cent. contained 1 lb. to 2 lb.	
0·7 per cent. contained less than 1 lb.	
87·1 per cent. were free or contained only a slight trace	

DISEASES OF CATTLE.

Pleuro-pneumonia Contagiosa.

One hundred and six (106) outbreaks were reported in the following districts:—

District.	1918.						1919.						Total.
	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March.	April.	May.	June.	
Brisbane	2	..	1	..	..	2	..	1	..	..	1	..	7
Toowoomba	1	..	..	..	1	..	..	..	..	..	..	..	2
Warwick	..	..	..	..	..	..	..	..	..	..	..	..	..
Maryborough	5	1	1	1	2	1	2	1	1	3	3	..	21
Roma	1	..	2	..	..	..	2	..	2	..	..	..	7
St. George	..	..	..	..	..	..	1	..	..	..	..	..	1
Charleville	1	5	..	2	1	..	..	..	..	..	..	..	9
Cunnamulla	..	..	..	2	..	..	..	..	..	..	..	..	2
Windorah	..	..	..	1	..	..	..	..	..	..	..	..	1
Thargomindah	..	..	1	..	..	..	..	..	..	..	..	..	1
Gladstone	..	..	..	..	..	..	..	..	1	..	1	1	3
Rockhampton	1	..	1	..	..	1	9	..	..	..	..	1	13
Clermont	..	..	..	..	3	..	..	..	..	..	..	..	3
Springsure	..	..	1	3	..	..	3	1	1	..	..	..	9
Barcaldine	..	..	..	..	..	..	..	..	..	..	..	..	..
Longreach	2	1	..	..	..	1	..	1	1	..	..	..	6
Winton	..	..	..	..	..	..	1	..	..	..	..	..	1
Bowen	..	..	..	..	..	..	1	..	1	1	1	1	5
Townsville	..	..	..	..	..	..	..	..	..	..	1	1	2
Hughenden	1	..	..	..	..	..	..	1	..	..	2	2	6
Cloncurry	..	..	..	..	..	..	..	1	..	..	..	3	4
Cairns	..	..	..	..	..	1	..	..	1	..	..	..	2
Cook	..	..	..	..	..	..	..	..	..	..	..	..	..
Normanton	1	..	..	..	..	..	..	..	..	..	..	..	1
	15	7	7	9	7	6	19	6	8	5	8	9	
Total number of outbreaks in Queensland													106

Tuberculosis.

Two hundred and thirty-seven (237) animals were subjected to the tuberculin test, of which number eight (8) only gave a positive reaction. Other diseases investigated were:—Tick fever, contagious abortion, meningitis, blackleg, lung worms and stomach worms, actinomycosis, pneumonia of calves, *Osteo malacia,* malignant growths, and vegetable poisoning. Owing to drought conditions, cattle eat weeds and green shrubs which under normal conditions would not be eaten; consequently, many cases of poisoning were reported. In most cases it was impossible to diagnose with certainty the exact cause, but arrangements are being made to carry out feeding experiments when the opportunity offers.

Native Fuchsia or Gidyea Poisoning.

For many years cattle and sheep have died from poisoning, due to eating either fuchsia or gidyea, or both. When in the North-western districts a few months ago, opportunity was taken to obtain available information from practical stockmen. The geographical distribution of the affection ranges from parallel 23 degrees to parallel 21 degrees, commencing at Herbert Downs Head Station; thence along parallel 23 degrees, across Northern Territory Border, embracing Tobermorey; thence in a northerly direction through Bathurst Downs and Gordon Creek Blocks to the southern boundary of Austral Downs (rare cases have been reported on Austral Downs and Avon Downs); thence along the Burke Rabbit Fence through Headingly to the head of Toby Creek on Oban; thence along the eastern corner of Drummoyne through western corner of Ardmore, following 139 degrees meridian of longitude through Mungerebar-Mindyalla to the point of commencement at Herbert Downs.

Investigations were made by Mr. H. O'Boyle, M.R.C.V.S., in 1910, on Roxburgh Downs, Carandotta, and other holdings, when he came to the following conclusions:—

(*a*) That deaths were due to stock eating some poisonous shrub.

(*b*) That the green leaves of the fuchsia contain the poison, as none of the shrubs were in flower or fruit.

(*c*) That the poison acts on the heart.

(*d*) That fatigue, excitement, &c., especially after drinking, increases the mortality.

Later he carried out feeding experiments, when he proved conclusively that native fuchsia fed to sheep caused death in a few hours, provided the leaves were given with a few fruits of the plants, whereas the fruit themselves were non-toxic. The Agricultural Chemist (Mr. Brünnich), after analysing the fuchsia, found that it contained a cyanogenetic glucoside, and pointed out that, while not necessarily in itself poisonous, it is decomposed by an enzyme or ferment accompanying it in the plant, either upon maceration in water or when taken into the stomachs of animals, yielding the deadly hydrocyanic acid or prussic acid.

In 1910 the Agricultural Chemist analysed some seed pods of gidyea, and found that they contained a considerable amount of the glucoside "saponin." This poison is a powerful irritant and muscular paralysant, which usually caused death by paralysing the heart. Opinions differ very much amongst stockowners as to the poisonous properties of fuchsia and gidyea; consequently, arrangements were made for Mr. Stock Inspector Patullo, of Urandangie, to make further inquiry and to carry out some feeding experiments. He reported that experiments had proved fuchsia to be fatal to stock on account of the presence of prussic acid. The season was too late for feeding experiments with gidyea, as the pods had fallen off. Inspector Patullo reported as follows on the 6th December, 1918:—

"In acordance with your instructions, I proceeded to Roxburgh Downs on the 9th November last to try feeding experiments with gidyea pod.

"On my arrival at Roxburgh, I found they had all yards in use, and none were available for holding cattle for experimental purposes.

"I spent a few days riding over the gidyea area, but could discover no pod, except a very few dry ones. All the pod appears to have dried up and fallen off.

"I called at Carandotta on my way back; and Mr. Campbell informed me that they were far too busy lamb-marking, &c., to attend to the getting in and feeding of any sheep.

"On reaching Urandangie I received your wire *re* supplies of fresh gidyea pod. I regret to state that, although I have searched on Headingly, Walgra, and Roxburgh, I have been unable to secure any pod. I could only get a few dry ones, which I am forwarding to you. It is too late in the year to try the gidyea, as no pod is now available.

"On Sunday, 24th November, I again proceeded down the river. At Walgra I was informed that they were having serious losses. I stayed three days, and examined Marion Lake country. On the east side of the lake I counted forty-eight dead beasts; but on the west side I could discover no dead cattle whatever. There is fuchsia in quantities on the east, but none on the west side. Gidyea is the same on both sides.

"On the 25th we took three head—two cows and a heifer—that had not been on gidyea country, and tailed them on Coolibah Flats, 3 miles from the nearest gidyea. They were yarded at night.

"These cattle all ate fuchsia whilst being herded; and, on being let out of the yard on the third day, they ran a few hundred yards, when one cow and heifer dropped dead.

"I again proceeded to Roxburgh; but the manager was busy mustering and inoculating cattle for the road, and could give me no assistance, and had no yard available for feeding in. He expressed the opinion that it was too late in the year, as there was no gidyea pod to be got for feeding.

"The cattle are dying worse at present than ever before.

"I am now proceeding to Headingly to try and experiment with fuchsia feeding.

"I have been very disappointed at my inability to carry out the experimental feeding

as laid down by yourself; but still I have been getting a better insight into the areas in which the losses occur.

"I only hope that my efforts at Headingly meet with better success."

Mr. G. R. Beauchamp, of Westward Ho, Boulia, wrote on the 25th November, 1918:—

"Well, as I had a good chance here the other day of proving beyond doubt that (no matter what the fuchsia might do) the gidyea, while in pod, will poison cattle. Being short of grass near the homestead, I broke down some gidyea limbs for the goats. Just then the milking cows were let out of the yard, and two of them went and ate some of the gidyea I had broken down. These two cows got poisoned. When I found this out, I went and had a look at the gidyea, and found that the limbs had been heavily laden with pods. It is this bean pod, in my opinion, that causes all the trouble. Thinking the above might assist you in your experiments, hence the letter."

There is no doubt that fuchsia is responsible for a number of deaths. Still, knowing that the gidyea pods contain a poison, and that many practical men hold the view that they are poisonous to stock, it seems quite probable that both the gidyea and fuchsia are killing animals; but further feeding experiments must be carried out before the question can be definitely settled. The observant stockmen can greatly assist the elucidation of the problem by affording assistance and information to the inspectors who are investigating the problem.

Sheep.

Stomach and tape worms have been prevalent in sheep. Mr. Brown (Instructor in Sheep and Wool) reports that these parasites have affected flocks in various districts, viz.:—Peak Downs, Springsure, Isisford, Augathella, Jericho, Roma, and the Darling Downs. The Departmental drench (arsenic and Epsom salts) has been found very effective.

The nasal-fly (*Oestrus ovis*) has been reported from several districts.

The blow-fly pest has not been in great evidence during the year, owing to the protracted dry weather. Jetting of sheep with an arsenical dip has given excellent results; it is the practice to use it double the strength recommended by the various manufacturers. By adopting this method sheep can be protected over lambing time, which is the period when they are particularly likely to be struck and most difficult to handle.

A report was issued by the Instructor in Sheep and Wool in February last embodying the results of five years' experiments at Gindie and general experience obtained outside those operations. Several important questions have arisen which have a positive bearing on the solution of the problems, and further investigations are being carried out. As a result of past investigations, no specific has yet been discovered which completely prevents fly attack. No specific has given more than three months' protection, and the use of arsenical preparations has given the best results.

Crutching was the recognised method of treating sheep until the Orion Downs process of jetting the animals with double strength poisonous dip was introduced.

A very fine illustration of the respective values of crutching and jetting was sent in to the Department recently.

On a station in Western Queensland 30,000 ewes were jetted prior to lambing, and on inspection afterwards none were found attacked by flies. In the same district, on a similar number of sheep and about the same time, crutching was used as the check; and on inspection over 10 per cent. were found to be blown, and constant mustering and dressing were found necessary.

Several problems have arisen which require elucidation, namely:—

Why in some years will a slightly infested sheep die apparently from septicæmia, while in other years the whole body of the animal may be involved without death ensuing?

The radius within which flies travel? By many it is contended that their movements are purely local.

Is it possible by means of traps, parasites, or poison to so minimise the fly that the attacks would be negligible?

The best method for jetting is the use of a long race (say 50 feet), and at the exit end this race should be narrowed to a width of 20 inches, with a gate at the end to regulate the passage of the sheep. A man standing in a pit, 3 feet by 3 feet by 3 feet, handles the hose, which has an "Edgell cut-out," and can easily jet from 5,000 to 6,000 per day. It is not necessary to try and save any of the waste fluid, as it is but slight. One hundred pounds per square inch is a good pressure to operate with.

The Chalcid wasp parasite is to be found almost everywhere, and it is doubtful whether an appreciable effect can be produced by these; otherwise it is probable that flies would not have increased as they have done in the past. Nevertheless, it is advisable that they should be bred and distributed.

Diseases of Swine.

Pigs generally have been healthy; but one district was affected with a serious disease, where numbers of young pigs died apparently from a form of pneumonia. As the disease appeared very contagious in young pigs (up to four months of age), arrangements were made for experiments to be caried out at the Stock Experiment Station, Yeerongpilly.

Veterinary Surgeon McKenzie reported that the chief symptoms exhibited were:—Laboured breathing, mucous discharge from nostrils, and high temperature (107 degrees F.). *Post-mortem* examination revealed congestion of the lungs in some cases, whilst others showed pneumonia and hepatisation with large masses of caseated matter, and abscesses. Later, the Veterinary Surgeon reported as follows (the results of experiments carried out in conjunction with the Government Bacteriologist and his staff):—

"On 11th February, 1919, three affected pigs were received at Yeerongpilly, one of which died before delivery. A *post-mortem* examination showed extensive necrotic areas in both lungs with fibrous adhesion to the chest wall. Smears taken from lungs and liver showed numerous organisms, chiefly strepto-cocci and

small ovoid bacilli. Cultures were placed in gelatine agar. Cocci grew freely, but no bacilli colonies.

"On 12th February, 1919, the second pig died. Microscopic examination showed organisms, chiefly the ovoid bacilli. Efforts to grow pure cultures again unsuccessful. On 13th February, 1919, two healthy pigs were placed in contact with the remaining diseased pig. This pig died on 18th February, 1919, macroscopic and microscopic results being identical with the other two. Two guinea pigs inoculated subcutaneously with fluid from the lungs of this pig died—one on 21st February, 1919; the other on 25th February, 1919. Microscopic examination showed pus organisms only.

"On 10th March, 1919, the two contacts, having failed to develop the disease, were released.

"On 19th March, 1919, two pigs in the earlier stage of the disease were obtained. On 21st March, 1919, No. 1 was killed. The lungs showed numerous necrotic areas of small size without fibrous adhesions, and on microscopic examination numerous ovoid bipolar organisms and a few large round bacteria. Cultures from the lungs were placed in slightly alkaline agar, and pure colonies were obtained. With fluid from the lungs, one pig was inoculated subcutaneously and one by swabbing the nostrils; one rabbit intravenously; one guinea pig subcutaneously, one intraperitoneal, and one intrathoracic.

"On 26th March, 1919, the rabbit died. Microscopic examination of smears from lungs and liver showed bipolar organisms identical in appearance and staining with *Bacillus suisepticus*, the causative agent in swine plague (necrotic pneumonia).

"On 26th March, 1919, the guinea pig inoculated intrathoracic developed pneumonia, and died on 27th March, 1919. *Post-mortem* examination showed numerous small necrotic areas in the lungs, and the bipolar organism was found in lungs, liver, and heart. The other two guinea pigs remained unaffected; also, the two pigs treated.

"On 26th March, 1919, one rabbit and one guinea pig were inoculated intravenously with fluid from the liver of the rabbit, which died on that date. Both died on 28th March, 1919; and in each case the lungs showed pneumonic lesions, also the bipolar organism in lungs, liver, and heart.

"On 3rd April, 1919, two pigs were inoculated intravenously with pure cultures of the bipolar organism obtained from the first rabbit and grown in boullion of slightly alkaline reaction. On 6th and 7th April, 1919, one showed raised temperature and laboured breathing, but recovered. The other pig showed marked clinical symptoms of pneumonia, and was killed on 8th April, 1919. The lungs showed slight lesions, with the organism numerous in liver and lungs.

"On 19th March, 1919, two healthy pigs were placed in contact with the diseased pig No. 2 received on that date, and remained with him till 8th April, 1919. On 26th April, 1919, one developed the disease, and died on 4th May, 1919. The lungs showed the typical lesions, and the organism was found in lungs, liver, and spleen.

"On 8th April, 1919, pig No. 2 was killed, the blood collected, and the serum extracted. On 16th April, 1919, two rabbits received 1 c.c. each of this serum intravenously. On 22nd April, 1919, each of these rabbits received 1 minim of pure culture of the bipolar organism intravenously, and are still healthy. On the same date a third rabbit received the same quantity of pure culture intravenously.

"On 24th April, 1919, this control rabbit showed symptoms of sickness, and died on 26th April, 1919. The organism was present in lungs and liver.

"At the present time investigations are suspended, owing to a lack of experimental subjects.

"In so far as they have gone, the investigations point to the following:—

(1) A disease in pigs exists in this State having similar clinical symptoms to a disease known in America as "swine plague," and in Europe as "necrotic pneumonia."
(2) The disease has been produced by natural infection, and experimentally by inoculation.
(3) The isolation of an organism apparently identical in physical characters, mode of growth, and methods of staining with that accepted as the causative agent of the disease in other countries.
(4) The possibility of producing an immunising treatment.
(5) The non-success of the first series of experiments may be attributed to—(*a*) Predominance of pus organisms owing to the advanced stage of the disease; and (*b*) use of unsuitable media for culture growth."

Tuberculosis.

It is again necessary to draw attention to the number of pigs that are affected with this disease. Of 168,106 pigs slaughtered and examined, 1,575 carcasses were condemned as being unfit for human consumption.

If owners would only realise how extremely susceptible these animals are to tuberculosis, greater care would be taken and the number of cases reduced.

It is considered by many that the use of milk from tubercular cows is the chief cause; but, although several cases have been investigated during the year, they could not be definitely attributed to it. The trouble seems most frequently attributable to infection from pig to pig, or to pigs eating the offal of tubercular cows. Greater attention should be paid to the sanitation and cleanliness of pig yards and styes, and any suspected or sick pig should immediately be isolated. Clean sound food is just as essential to the health of a pig as it is to the human being. How frequently does it occur that the milk from a certain cow is unfit for man, yet considered by some persons as good enough for the pigs!

Pigs which are allowed to eat raw tubercular offal must contract the disease. It develops more rapidly, and is more likely to become generalised in this animal than any other.

Inspection of Meat and Slaughter-houses.

Considerable attention has been paid by the Senior Slaughtering Inspector to country slaughter-yards and butcher shops in the following districts:—Boonah, Flinders, Harrisville, Anthony, Kalbar, Mutdapilly, Templin, Coulson, Rosewood, Mount Sylvia, East Haldon, Forest Hill, Tallebudgera, Nerang, Southport, Coolangatta, Dalveen, Stanthorpe, Warwick, Cambooya, Tannymorel, Sundown, Killarney, Allora, Greenmount, Wallangarra, Roma, Wallumbilla, Brigalow, Jandowae, Dalby, Cooyar, Mitchell, Charleville, Miles, Drillham, Acland, Goombungee, Dar Creek, Inglewood, Pratten, Gore, Gympie, Kin Kin, Cooroy, Murgon, Maryborough, &c.

Twenty-nine slaughter-yards were condemned as being totally unfit for the purpose, fifty-one new yards erected, and two remodelled.

Total of Stock Slaughtered and Condemned at Slaguhter-houses and Bacon Factories for Twelve Months ending 30th June, 1919.

Description of Stock.	Number of Stock Slaughtered.	Carcasses and Portions Condemned.	Disease.	Per-centage.
Bullocks	44,602	184 carcasess	Tuberculosis	·410
		319 forequarters	Tuberculosis	·710
		69 hindquarters	Tuberculosis	·132
		1,302 heads	Tuberculosis and actinomycosis	2·941
		8 carcasses	Poverty	·017
		8 carcasses	Redwater	·017
		39 forequarters	Bruised	·078
		5 hindquarters	Bruised	·011
		15 forequarters	Pleuro-pneumonia	·033
		4 forequarters	Abscesses	·009
		2 hindquarters	Abscesses	·004
		1 carcass	Septicæmia	·002
		1 carcass	Peritonitis	·002
Cows	7,011	99 carcasses	Tuberculosis	1·412
		86 forequarters	Tuberculosis	1·212
		36 hindquarters	Tuberculosis	·513
		246 heads	Tuberculosis and Actinomycosis	3·508
		14 carcasses	Poverty	·2
		9 carcasses	Redwater	·128
		3 forequarters	Bruised	·042
		4 forequarters	Pleuro-pneumonia	·057
		6 hindquarters	Abscesses	·085
Calves	6,267	108 carcasses	Immature	1·723
Pigs	168,106	1,575 carcasses	Tuberculosis	·936
		11,614 heads	Tuberculosis	6·908
		18 carcasses	Jaundice	·010
		5 carcasses	Pneumonia	·003
		1 carcass	Pleurisy	·0006
Sheep	223,049	20 carcasses	Redwater	·009
		10 carcasses	Abscesses	·005
		7 carcasses	Poverty	·003

Newmarket Saleyards.

	Stock Sold.		*Average Prices.*
Cattle	27,467	Bullocks	£13 10s. to £14 10s.
Calves	2,347	Cows	£10 0s. to £10 10s.
Sheep	201,984	Sheep	£1 6s. to £1 7s.
Lambs	17,144	Lambs	£1 1s.

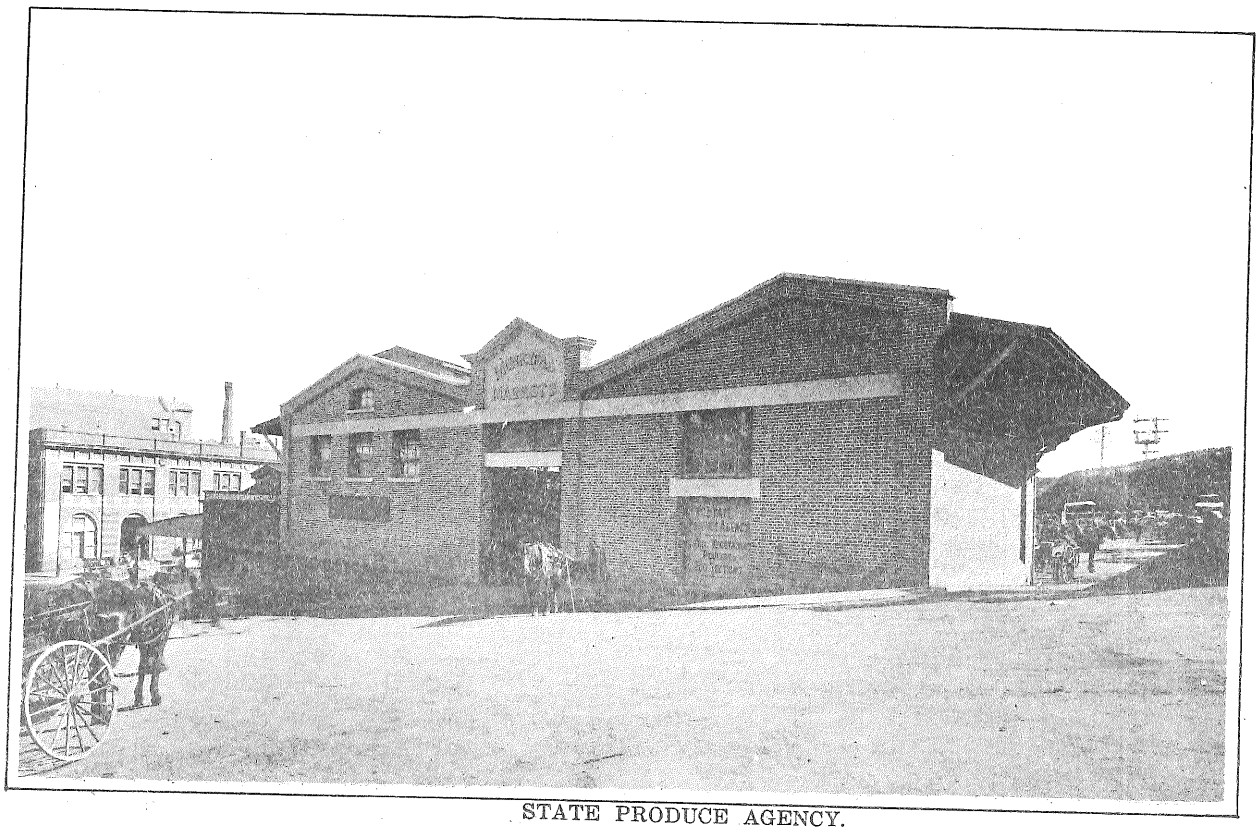
The following table shows stock movements for the various stock districts :—

District.	Entered District.			Removed from District.			Movements in District.			Stock Dipped.		Stock Sprayed.	
	Horses.	Cattle.	Sheep.	Horses	Cattle.	Sheep.	Horses.	Cattle.	Sheep.	Horses.	Cattle.	Horses.	Cattle.
Barcaldine	286	12,971	405	592	9,272	103,446	964	7,262	142,475	100	14,678	485	6
Bowen	188	10,252	620	1,374	9,541	525	4,212	16,930	222	490	485,062	128	290
Brisbane	3,433	61,326	317,700	3,708	23,368	37,788	5,297	64,885	55,359	600	22,590	740	425
Cairns	1,554	8,558	1,588	1,907	21,714	..	5,329	32,251	..	..	24,500	..	350
Charleville	1,389	66,444	101,438	5,147	47,773	347,131	6,577	53,228	390,594	..	..	..	..
Clermont	654	14,840	15,261	2,354	32,345	28,922	4,658	37,139	18,555	173	23,981	..	..
Cloncurry	3,536	93,939	18,033	5,702	89,049	33,700	3,869	42,648	24,528	809	132,016	..	..
Cunnamulla	2,856	25,543	270,670	44,24	41,820	322,239	3,063	10,557	237,707	..	..	..	..
Gladstone	1,172	25,193	914	3,035	37,586	..	2,012	39,450	..	1,049	9,762	587	..
Helidon	2,597	3,650	45	3,877	9,211	130	3,804	26,923	30	3,468	18,616	95	1,150
Hughenden	1,002	32,905	83,502	3,111	40,280	249,753	3,827	32,480	432,350	62	41,429	..	12
Longreach	741	22,436	95,054	3,504	16,383	611,057	3,277	4,632	561,250	..	..	3,624	883
Maryborough	2,596	31,147	8,231	3,909	68,370	1,394	10,161	218,163	2,991	774	124,626	197	2,678
Normanton	838	2,900	19	2,282	51,950	..	2,062	6,963	..	5,711	39,814	..	..
Rockhampton	791	27,306	64,254	3,787	41,777	16,858	8,418	127,772	16,199	95	4,172	124	139
Roma	1,002	36,692	307,308	3,028	47,672	338,349	7,228	112,501	522,044	337	17,407	81	366
South Burnett	1,828	11,540	490	1,778	20,656	550	21,401	225,496	405	580	45,850	..	159
Springsure	2,267	9,987	56,051	4,574	22,329	103,142	5,191	18,408	72,075	3,380	20,284	254	72
Tallebudgera	340	3,091	4,675	292	3,549	630	86	4,745	41	6	1,776	19	..
Toowoomba	10,351	76,979	236,923	11,279	79,895	201,239	21,558	307,853	492,178	3,315	77,643	1,172	1,293
Townsville	1,005	66,824	22,164	5,339	21,059	8,781	7,512	50,898	..	860	3,589	93	7
Winton	5,747	110,010	65,142	8,178	86,092	254,361	3,282	15,048	243,578	30	65,193	..	..

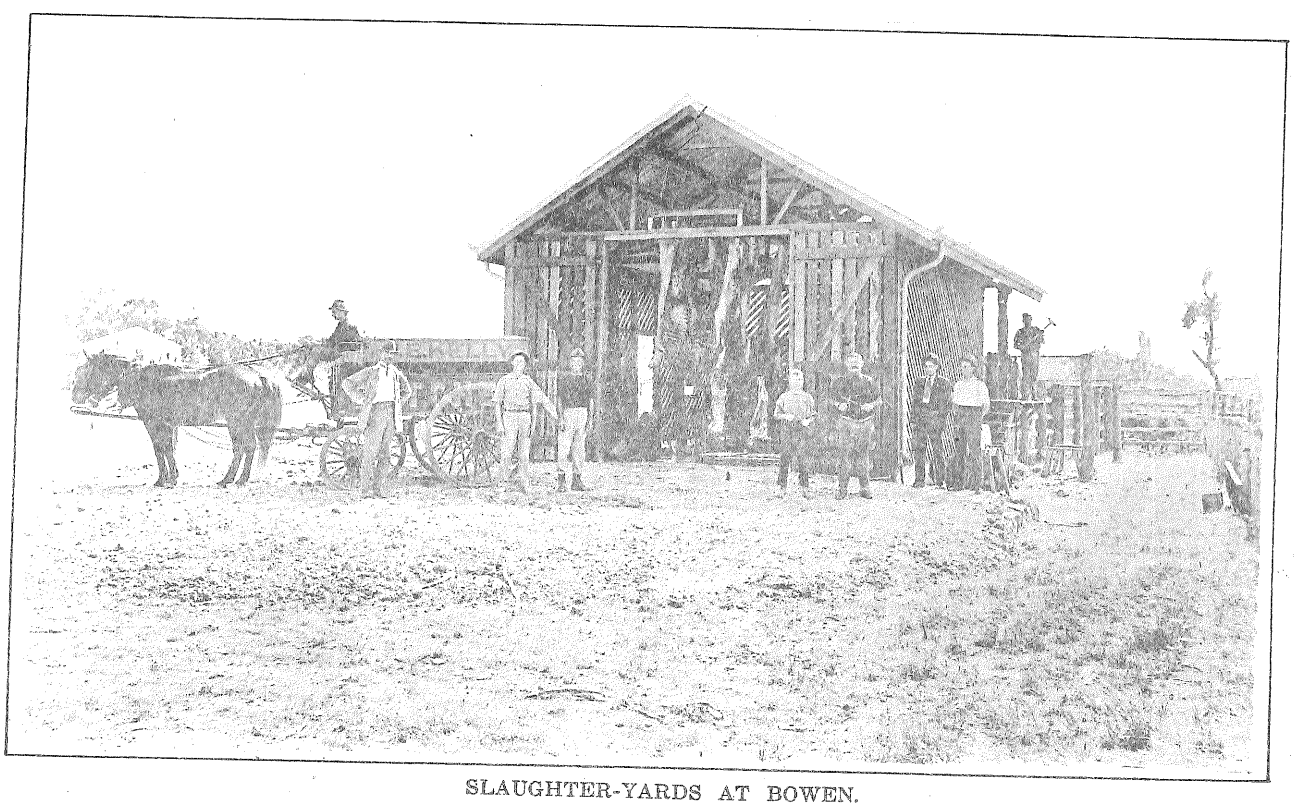
Pigs Introduced at the Tweed Heads.

Twenty thousand three hundred and twenty-nine pigs were inspected at the Border at the time of entry into this State for the various bacon factories.

ARTHUR H. CORY, M.R.C.V.S.,
Chief Inspector of Stock.



STATE PRODUCE AGENCY.



SLAUGHTER-YARDS AT BOWEN.

REPORT OF THE GOVERNMENT BACTERIOLOGIST.

ADMINISTRATIVE.

Steady progress has been made with regard to the ordinary routine Laboratory work and various original investigations.

In connection with the office work of the institution, it may be stated that during the past year 1,505 letters, telegrams, and reports were received, and 1,518 letters and reports despatched.

During the year a considerable amount of correspondence was dealt with; and numerous interviews were granted to stockbreeders, farmers, managers of bacon and butter and cheese factories, and others who were interested in the work of the Laboratory, and desired information regarding live stock and their diseases, or some subject pertaining to the hindrances due to microbic origin in the manufacture of meat and dairy products, &c.

Investigations into the nature and cause of many of these difficulties has resulted in furnishing the necessary information leading to the adoption of hitherto unthought-of preventive measures. These investigations must prove a financial benefit to the State, and particularly those engaged in the primary industries.

Fees and Moneys Received.

The total amount of money received for work performed, preparation of blood-supply animals, pleuro virus, blackleg vaccine, lactic cultures, and other laboratory products was as follows:—

	£	s.	d.
Stud amimals inoculated ..	684	17	0
Bleeders supplied	168	0	0
Tick fever blood	228	6	0
Blackleg vaccine	715	16	0
Lactic culture	21	7	6
Pleuro virus	26	16	0
	£1,845	2	6

This is an increase of £236 17s. 6d. more than the fees collected during the previous year.

Pleuro-pneumonia and the Supply of Pleuro Virus.

Although there have been outbreaks of pleuro during the past year, the disease has apparently not been very prevalent, nor so widespread as in previous years; consequently, the demand was only for 6,711 doses of pleuro virus, as against 54,475 doses supplied during the previous year.

This virus is obtained from natural cases of pleuro-pneumonia, and before being supplied to stockowners is all carefully examined, and has to pass very crucial microscopical and culture tests in order to determine its freedom from tubercle bacilli and various septic and other contaminating organisms.

Blackleg Vaccine.

There can be no better testimony as to the efficiency of the Departmental vaccine than the continued increasing demand. During the past year 35,797 doses were supplied to stockowners, which amount is greater than the total supplied during the previous three years.

Numerous letters have been received from farmers pointing out that hitherto calves were dying every season from blackleg; but, since the system of protective vaccination had been adopted, deaths from disease were practically unknown.

Strangles.

Several specimens of pus from cases of strangles in horses have been received for examination. In each case, the infective micro-organism (a streptococcus) was isolated and grown in a specially prepared alkaline boullion. From these cultures an autogenous vaccine was prepared and standardised. In several cases this vaccine proved to be an unqualified success in the curative treatment of the infected animal.

Notwithstanding that strangles is a contagious disease—and, although seldom fatal, causes considerable losses and inconvenience to horseowners—it is astonishing what little control is exercised over horses affected with the trouble, and also those that come in contact.

At one station I visited recently, where there were several cases of strangles, I was shown a pony very badly affected with suppurating abscesses on either side of the neck and on the chest, and pus oozing out and dropping on the ground. Beyond bathing with hot water, there was no attempt to use disinfectants or any other precautionary measures, the pony being freely handled by the owner and others and allowed to drink from a trough where other horses frequented.

Tick Fever.

Immunisation of Stud Cattle.

Once again I am able to report on the highly successful results attending the inoculation of valuable stud (beef and dairy) animals.

During the past year the losses were under 1 per cent. among the cattle stalled.

As previously pointed out, cattle of either sex, all ages, different breeds and conditions are forwarded—in fact, the only animal that died was a Hereford heifer in calf.

The total number of stud cattle received for treatment was 112, viz.:—

—	Bulls.	Heifers.
Beef Shorthorns	34	16
Herefords	27	29
Devons	1	2
Milking Shorthorn	1	..
Jersey	..	1
Ayrshire	1	..
	64	48

Inoculation of High-grade Bulls in Clean Country.

Several well-known breeders residing on the Darling Downs have, on my recommendation, had numbers of stud and herd bulls and heifers inoculated on their own pastures. The results have been extremely satisfactory—viz., less than 2 per cent. dying from the inoculation fever.

A prominent breeder of Herefords is so well satisfied with the inoculation results at Yeerongpilly that, when having sold stud animals intended for ticky country, he takes the entire risk of having the inoculation work carried out at this station.

This gentleman states that we have treated about 100 stud animals without a single loss.

The advantage of the above procedure is that animals so treated can, when necessary, be introduced to ticky country with comparative safety.

Contagious Pneumonia in Swine.

The nature and occurrence of contagious pneumonia among pigs depends almost entirely upon the susceptibility of pigs to the disease. The capability of receiving the infection is principally affected by their condition of health, or by the reduction of their natural resistance as a result of weakening influences.

Very young pigs, up to a few weeks old, are rarely affected; otherwise age does not seem to have any influence.

The disease appears usually in a sporadic form, and is only transmissible from animal to animal when the contacts are kept under some unfavourable conditions, such as insanitary surroundings, exposure to damp and cold, and resistance lowered through want of nutritious food, &c.

An outbreak of this disease occurred on the Downs, near Toowoomba, during March and April, and was investigated by the Government Veterinary Surgeon (Mr. A. McKenzie), who submitted *post-mortem* specimens for bacteriological examination and animal experiments.

The bacteriological examination resulted in detecting the typical swine plague bacteria. These were found in the lungs, liver, spleen, kidney, and blood. In the stain cover-glass preparation these organisms were seen as bipolar short rods with rounded ends.

Culture Experiments.

These organisms were readily cultivated in beef broth, causing a general turbidity in twenty hours; while in Agar agar the growth is less vigorous, forming small round greyish-coloured colonies with a moist glistening appearance. The cultures emit a peculiar pungent odour.

Pathogenesis.

Rabbits are very susceptible, and, when inoculated either subcutaneously or intravenously, die of septicemia in from sixteen to twenty-four hours. Guinea pigs are less susceptible, usually dying in thirty to seventy-two hours after inoculation.

Experiments with Young Healthy Pigs.

(1) Two young healthy Yorkshire pigs were kept in contact with a diseased pig for nineteen days, when the diseased pig was killed. The *post-mortem* examination showed lesions of the disease, viz.:—Congested lungs, with necrotic patches, pleuritic adhesion to the chest walls, and enlarged lymphatic glands, some being studded with small hemorrhagic spots.

(2) One young healthy Yorkshire pig inoculated subcutaneously in groin with material containing the bipolar organism from lung of young diseased British black pig. Result: Pig remained unaffected.

(3) One young healthy Yorkshire pig was subcutaneously inoculated in the groin with broth culture. Result: Pig remained unaffected.

(4) One young healthy Yorkshire pig inoculated in the thoracic cavity with pus containing bipolar organism from lung of diseased pig. Result: Pig remained unaffected.

(5) One young healthy Yorkshire pig inoculated in the thoracic cavity with culture of bipolar organism from infected rabbit. Result: Pig remained unaffected.

(6) One young healthy Yorkshire pig sprayed in the nasal organ with an emulsion of lung from diseased pig. Result: Pig remained unaffected.

(7) One young Tamworth pig, in a more or less impoverished condition, and sickly looking, was inoculated with pure culture obtained from liver of rabbit. Result: On the fourth day this pig developed a cough and panted freely, and there was a continued heavy discharge of mucopurulent material from the nose. The animal got worse, had difficulty in breathing, refused food, and was killed on the eighth day. Result of *post-mortem* examination: The lungs showed hepatised lobules, with a few necrotic patches; there was enlargement of the bronchial and mediastinal glands; bipolar bacteria was present in the lungs and glands.

As the investigation is still in progress, a more detailed report will be furnished at a later date.

The following account of symptoms and *post-mortem* appearances in the pig have been abbreviated from the description given by Hutyra, Mareek, Mohler, and Eicchorn.

Symptoms in the Pig.

In susceptible animals, whether by artificial or natural infection, the incubation period is usually of short duration, showing symptoms of hemorrhagic septicemia, with a marked fever temperature rising from 102 degrees ("the normal") to 106 degrees Fahr., and occasionally higher. The animals become very weak, refuse food, and lie about in an apparently semi-comatose condition, and when urged to move they have a staggering gait. The sick animals have a short dry spasmodic cough. The respiration is accelerated and difficult, while the coughing becomes more frequent and severe, and considerable slimy material is expelled from their mouths and a purulent discharge from the eyes.

The animals become visibly emaciated, and finally can hardly rise from the ground.

The heart action is accelerated; later, throbbing. There is at first constipation; later, diarrhœa sometimes blood-stained; and towards the termination red spots appear and develop on different parts of the body, especially under the ears, on the neck, and on the rump.

The duration of the acute form usually extends from one to two weeks. Complete

recovery is very rare, although occasionally the condition temporarily improves, but it usually passes into the chronic form of the disease.

After the subsidence of the acute symptoms, indications of a lung affection with periodical coughing and difficulty in respiration will persist for a long time. In such cases animals show perturbed appetite, progressive emaciation, and occasionally chronic inflammation develops at the joints; and towards the termination of these cases there is also fœtid diarrhœa, and the animal dies in from three to six weeks from complete exhaustion.

Not infrequently, however, the affection in the lungs remains stationary, and the animals may even be fattened in spite of the encapsuled foci in these organs.

Post-mortem Appearances.

In the more frequent acute cases, lesions in the chest organs are constantly present. The lungs contain either small or larger congested or hepatised areas of which the cut surface, according to the duration of the disease, is either blackish-red or dark brownish-red to light grey, and studded with small yellow granules of necrosed tissue.

In the thoracic cavity sero-fibrinous exudate may be present in varying quantities, sometimes causing adhesion between the lungs and the chest walls. Hemorrhages or small extravasations of blood and necrotic foci are often found in most of the lymphatic glands in the thoracic and abdominal cavity. Caseous foci may also be found in the tonsils, in some joints, in bones, and the subcutaneous connective tissue. Numerous small hemorrhages are present in the skin, the serous and mucous membranes, in the kidneys and bladder, and on the heart.

Earlier Investigations into Contagious Pneumonia in Swine.

In the earlier part of 1892, Mr. Edward Stanley, M.R.C.V.S., Government Veterinarian, and I investigated the nature and cause of outbreaks of contagious pneumonia disease among pigs in the Camden and Riverstone districts of New South Wales.

The result of our investigation, which extended over a considerable period, were embodied in a special report to the Board of Health. A brief summary of our findings is as follows. This disease had long been known to pig-breeders, dealers, and butchers under the name of "pants" or "heaves," and from time to time had occasioned very serious losses to owners:—

(1) The disease is due to a specific micro-organism, a bipolar staining bacterium found principally in the affected lungs, bronchial, and other lymphatic glands.

(2) This bacterium was isolated from the diseased tissues and cultivated through successive generations on artificial media—Agar agar and beef broth.

(3) The disease was induced experimentally by inoculating with broth cultures healthy common black pigs and guinea pigs.

(4) The pathogenic results were identical with the original disease.

(5) The pigs, although apparently healthy, were not well nourished; and all of the eight inoculated took the disease.

(6) The guinea pigs were found to possess a considerable immunity to the disease. Of the seventeen inoculated five were quite resistant, four were only slightly affected, while in eight the disease became more advanced, showing typical lesions on *post-mortem* examination.

As a result of close investigation of this disease among pigs under natural conditions, it was found that the number of fatal cases was greatly increased by such unfavourable circumstances or predisposing causes as bad food, indifferent shelter, and the general ill-usage to which these animals are commonly subjected.

The slow progress of the disease among the experimental animals was no doubt favoured by the liberal treatment and repose enjoyed by the animals while under observation.

Supply of Lactic Cultures.

The introduction by this Laboratory of lactic cultures for the preparation of pure starters in the cheese factories in Queensland has done more to improve the quality of cheese than any other change in the system of manufacture. Not only has the ripening of the milk curd been regulated, but there has been a marked improvement, through this agency, of the flavour and aroma of the finished article.

In connection with the supply of lactic cultures, I wish to direct attention to the false economy of the managers of many cheese factories in requesting, during certain periods of the year, a discontinuance of the regular supply of cultures from the Laboratory. This is possibly due to the fact that during the colder months there is practically little or no outward signs of change for several days or perhaps a week after the bottle has been opened.

Considering the very small cost of a guaranteed article, I feel sure it would be a wiser policy to make the starters, on every

occasion, from a fresh pure culture, instead of from a bottle that has been opened several times, or from a portion of a previously prepared starter, both of which may have become contaminated.

As regards the manufacture of butter, it is to be regretted that the use of lactic ferment has so far made little progress in this State. However, it is interesting to note that some of the butter factories, after carrying on the old-time method of allowing the cream to ripen spontaneously with all its attendant imperfections, have now decided to introduce pasteurising plants for treating the cream, which afterwards will be ripened by means of pure starters.

In all countries where this method has been carried out on proper scientific lines, it has always resulted in the manufacture of butter of better flavour, aroma, and improved keeping qualities. Such an article must necessarily demand a better market with increased prices.

Specimens Received for Examination and Identification.

Some 209 specimens were received for examination, including blood, pus, urine, water, brine, bacon, vinegar, ticks, nasal discharges, excreta, pleuro virus, abnormal growths, &c.

The majority of the specimens were received from persons engaged in the dairying and grazing industry, and a fair proportion from managers of cheese, bacon, and butter factories; and the balance from the Departmental inspectors.

In many cases not only were the bacteriological findings reported to those submitting specimens, but full information was furnished stock-owners as to the best means of avoiding further losses. Advice was also given to managers of butter, bacon, and cheese factories as to the nature of the contaminating organisms found in the products sent for examination, as well as detailed particulars of preventive measures.

Separated Milk and Tuberculosis.

The returns from the various bacon factories show an extraordinary increasing number of pigs condemned for tuberculosis.

It is the practice on most farms for the separated milk from all cows to be mixed together; so that, should there be but one cow affected with tubercular mammitis, the whole of the milk becomes contaminated, and without further treatment is fed to the pigs and calves, and in this way these animals contract tuberculosis.

Extended observations in Denmark have shown that one calf in eight becomes affected through the milk it drinks; while it is a rare thing for a calf to be born with tuberculosis. The percentage is less than 1 in 100. Yet, before six months old, 13 per cent. react under the tuberculin test.

Repeated experiments have proved that young pigs are extremely susceptible to tuberculosis, and readily acquire the disease through ingestion of any tubercular material. There is no doubt that untreated separated milk is the principal source of infection, and it behoves the farmer to consider the grave nature of the question by subjecting all the milk, before being fed to any farm animal, to a pasteurising process, which can be carried out cheaply, and is so safe and reliable as to obviate all possible danger. All that is necessary is to heat the milk to 175 degrees Fahr. for about ten minutes, for not until this temperature is reached can safety be guaranteed.

On several occasions I have made a careful search of samples of separated sediment (slime) from a number of districts to see if they really harboured virulent tubercle bacilli.

When the specimens are received at the Laboratory, some of the material is smeared on cover-glasses, stained by Zeihl-Neelseen's method, and examined microscopically. Following this examination, portions of all the samples, whether showing the presence of tubercle bacilli or other suspicious organisms, are injected into guinea pigs, where the presence of active tubercle bacilli is soon made manifest by the development of tubercular lesions. As a result of such examinations, virulent tubercle bacilli have been definitely detected in some of the samples submitted.

As the disease in the cow advances, the lung tissue breaks down and becomes disintegrated, is set free, and most of the material coughed up from the lungs and swallowed, but many of the tuberculosis germs escape from the mouth in the form of spray or are discharged from the nose.

Therefore, another important source of infection of pigs with tubercle bacilli, and one which closely rivals tubercular milk, is to be found in the fæces of tuberculous cattle. It is a very common practice to allow pigs to feed in the same paddocks as cattle, and while doing this they thoroughly work over the fæces, eating portions of the food that have passed undigested through the alimentary tract of the bovine; so that, wherever there are tuberculous individuals among the cattle, the danger of passing the infection on to the pigs by means of the fæces is very great.

The method of the farmer paying into a fund to compensate him for any of his pigs that have been condemned for tuberculosis has not lessened the number of diseased pigs supplied, nor has it acted as an incentive to the farmer to try and eradicate or even control the disease. On the contrary, at one of our local bacon factories the manager assures me that their condemned pig fund has become exhausted, while there has been an alarming increase in the number of pigs condemned for tuberculosis.

My reason for bringing this question of the prevalence of tuberculosis amongst pigs under notice is to emphasise the urgent necessity that some action be taken to control this disease, and in particular to prevent its dissemination among pigs and calves by compelling farmers to scald the separated milk and all milk products that are used for food for farm animals.

LECTURES AND DEMONSTRATIONS.

During the year under review, I have delivered lectures and given practical demonstrations on various subjects specially selected as being suitable to dairy farmers; stockbreeders; butter, cheese, and bacon factory managers and employees; stock, dairying, and slaughtering inspectors.

The subjects dealt with were:—

Tuberculosis in cattle, pigs, and poultry, methods of determination and prevention, emphasising the necessity for scalding all separated milk before being fed to pigs and calves; also, nature and manifestation of the disease, means of detection, including the application of the tuberculin test.

Ticks and tick fever, symptoms and *post-mortem* appearances, method of spread. The cattle tick and its life history, protective inoculation, and methods of tick eradication.

Blackleg and its prevention by vaccination. Contagious mammitis in cows. Strangles in horses, and methods of prevention and curative treatment by the use of autogenous vaccines. Wounds, abscesses, and septic infections, and their nature and treatment with various disinfectants. Swine fever and contagious pneumonia in pigs.

The preparation and use of lactic bacteria starters for butter and cheese making. The necessity for a pure water supply on the dairy farm. Water contamination and methods of prevention. Processes of water purification.

The following were the places visited:—Gatton Agricultural College during the winter course to farmers' sons, Ipswich, Inglewood, Gunyan, Texas, Cannon Hill, Murarrie, Taroom, Miles, Chinchilla, Canning Downs, and Toogoolawah.

C. J. POUND,
Government Bacteriologist.

REPORT OF THE REGISTRAR OF BRANDS.

SIR,—I have the honour to submit herewith a report on the administration of "*The Brands Acts, 1915 to 1916*," for the year ended 30th June, 1919.

Details of registration of brands and earmarks are as follow :—

	Year, 1918-1919.		Number since Inception of Legislation.
	Number.	Fees Received.	
		£ s. d.	
Three-piece brands (F series) registered	1,445	722 10 0	67,702
Cancelled brands registered	545	817 10 0	6,263
Transfers	1,173	293 5 0	27,699
Brands cancelled	17	..	..
Marks cancelled	159	..	..
Alteration of address	510	..	..
Symbols	76	380 0 0	1,007
Cattle marks registered	1,319	329 15 0	15,483
Sheep brands and marks registered	244	84 10 0	7,146
Sheep brands and marks transferred	141	17 12 6	2,349
	..	£2,645 2 6	..

The figures for the year show a decrease in the number of the previous year in all registrations, and this is specially noticeable in the number of three-piece brands, cancelled brands, and symbol brands allotted.

The series of brands at present available for registration—and which consists of two letters and a numeral with the first letter horizontal—is now almost exhausted; and arrangements are in progress for the introduction of a new series of three-piece brands which will consist of a combination of letters and numerals with a diamond, spade, heart, and cross. As this series will be plain, and not liable to blotch, it is probable they will be readily availed of.

The demand for cattle and sheep earmarks is still insistent; and, to relieve the situation and prevent the confusion which would probably ensue in the event of the registration of two earmarks in the one area, arrangements have been made to subdivide certain districts, which will permit of the registration of the same mark in each subdivision instead of each district as hitherto. Where certain applicants submit brands and marks for registration with an ulterior motive, it is difficult to place a check on the allotment; but owners are now required to submit, with their applications, particulars of brands and earmarks which to their knowledge are used by their neighbours. Provision is made under "*The Brands Act Amendment Act of 1916*" for the cancellation of a brand or mark similar to that already used in the same locality and with priority of registration. This provision has been put into force in certain cases.

Numerous cases of alleged cattle-stealing have engaged the Courts at Cloncurry and Townsville during the past year, and heavy fines have been imposed in the Cloncurry district for irregularities under the branding laws. An extensive patrol of the district referred to was recently made by Staff Inspector Taylor, and inquiries made into certain irregularities and the illegal use of brands and marks. Stockowners are greatly concerned at the increase in cattle-stealing, especially in the North-western portion of the State; and officers of the Department and the Police are co-operating, as far as possible, in the suppression of these illegal practices.

RICHARD P. M. SHORT,
Registrar of Brands.

REPORT OF THE GOVERNMENT BOTANIST.

SIR,—I have the honour to present herewith a report on the work of the Botanical Division for the year ended 30th June, 1919.

FIELD WORK.

In July and August I spent five weeks in Papua as the guest of the Lieutenant-Governor, His Excellency the Hon. J. H. P. Murray, for the purpose of studying and collecting specimens of the flora of the territory of which comparatively little is known; a large series of specimens was gathered, and, as time permits, I am now working through the collection, which makes a large and valuable addition to our herbarium, besides providing many specimens for exchange purposes. In December, 1918, I spent a week in the Lamington National Park, and gathered a large number of specimens—several new to our collections. In April, 1919, I visited Central Queensland on a general collecting trip, but especially for the purpose of getting together a collection of grasses for general exhibition purposes. A visit was paid to Kilcoy for the purpose of inspecting paddocks where losses amongst stock had occurred, supposed to have been through eating poisonous plants.

LIBRARY.

The additions to the library, with the exception of a few periodicals, have been mostly exchanges with correspondents and institutions in various parts of the world.

HERBARIUM.

As in previous years, many of the most acceptable additions to the herbarium have been from correspondents, in different parts of the State, forwarding specimens for identification; and among the material forwarded there have been several new or rare specimens. About 200 specimens were received for identification from the Forestry Department. In addition to these, I worked out for correspondents outside the State about 150 specimens from the Bismarck Archipelago and fifty specimens from Fiji. These have been placed in the herbarium, and, with my own collection from New Guinea, provide a large addition to our collection of Polynesian plants. Specimens of 200 species of New South Wales and Western Australian plants were received from the Government Botanist, Sydney; and a similar collection of Queensland material forwarded in exchange. Specimens of 1,500 Philippine Island plants were received from the Bureau of Science, Manila; and 546 specimens of Queensland plants sent in exchange. From the Botanic Gardens, Singapore, forty-nine specimens of Malayan plants were received; and fifty specimens of Queensland plants sent them in return. From the Government Botanist, Melbourne, several specimens were received of Australian plants not previously represented in our collection; and material sent him of several recently described or rare Queensland and Papuan plants. From the University of California 100 specimens of Mexican and Californian plants were received; and 100 specimens of Queensland species sent in exchange. Seventeen sheets of Australian Mistletoes were forwarded to the United States' Laboratory of Forest Pathology, Spokane, United States of America; and 19 sheets of American parasitic plants received in exchange.

BOTANICAL MUSEUM.

Additions to the Botanical Museum have not been very numerous. The carpological collection has been added to from time to time, and a few large timber specimens have been added.

EXHIBITION.

In the Department's Court at the August National Show, collections were staged of grasses (both indigenous and naturalised), of weeds, of plants poisonous or suspected poisonous to stock, and of edible trees and shrubs. Collections of native grasses were prepared for the office of the Agent-General for Queensland, and for the office of the High Commissioner, London.

LECTURES.

During the year I delivered popular lectures on the following subjects before various bodies:—

"Native Trees and Shrubs of the Brisbane District."

"Trees and Tree Planting."

"Gum Trees."

"Vegetation of South-Eastern Queensland."

"Flora of New Guinea."

In October I accompanied the senior pupils of the Norman Park School on a Nature Study ramble, and gave instruction about the plants seen. In January I visited, for a couple of days, the school boys' camp at Toowoomba, and gave the boys notes on Australian plant life along popular lines—in the field by day, and by means of a lantern lecture in the evening.

PUBLICATIONS.

The following papers were issued during the year:—*White, C. T.:* Botany Bulletin XXI., "Contributions to the Queensland Flora" (issued 28th February, 1919). *White, C. T.:* The following in the "Queensland Agricultural Journal":—On a Peculiar Subterranean Fruiting Habit of *Vigna lanceolata,* R.Br., with description of a New Variety (July); Two Native Leguminous Fodder Plants (December); Illustrated Notes on the Weeds of Queensland, No. 14 (March); *Lomatia silaifolia*—A Poisonous Flower (June). *Smith, F., and White, C. T.:* An Interim Census of Cyanophoric Plants in the Queensland Flora—Proceedings of the Royal Society of Queensland, vol. xxx., page 83-90. *Longman, H. A., and White, C. T.:* Mutation in a Proteacous Tree—Proceedings of the Royal Society of Queensland, vol. xxx., pages 162-165. *Gillies, C. D., and White, C. T.:* On the Occurrence of Abortive Styles in *Buckinghamia celsissima*—Proceedings of the Royal Society of Queensland, vol. xxxi., pages 42-45.

MISCELLANEOUS.

In my last report I briefly referred to the special committee formed, under the auspices of the Commonwealth Bureau of Science and Industry, for the cultivation and improvement of native grasses and fodder plants. Owing to the exceptionally dry weather experienced last season and the very late rains, it was decided to hold over the sowing of seeds till next season; and as soon as conditions become suitable seeds of several native grasses will be sown for trial. Seeds of *Astrebla pectinata,* var. *curvifolia, Astrebla triticoides,* and *Andropogon sericeus,* var. *polystachysus,* were sent to Sydney for trial in New South Wales.

In April I was appointed member of a committee formed, under the auspices of the Bureau of Science and Industry, to draw up a complete survey of the weed pests of the Commonwealth. Several meetings of the Queensland subcommittee have been held, and a tentative list of the weeds of this State has been drawn up and is being printed.

In previous reports I have stressed the need for the appointment of a technical assistant; and, as this has now been approved in the coming year, I hope to find time to clear up a lot of work that previously had to be shelved on account of the pressure of ordinary routine business.

C. T. WHITE,

Government Botanist.

REPORT OF THE CURATOR OF THE BOTANIC GARDENS.

SIR,—I have the honour to submit the Annual Report of the Botanic Gardens for the year ended 30th June, 1919.

WEATHER.

The year again started with a dry spell, as, following an exceptionally dry June (12 points), only 14 points of rain fell in July; light rains only were experienced during the succeeding four months that led to a record dry summer, with only 59 points for December, 14 for January, and 47 for February. The spring rains, not having been sufficiently heavy to soak the ground, did not permit of a good general growth of vegetation; and considerable difficulty arose in keeping many plants alive, but by a generous use of the water supply available, with both day and night watering during the hot weather, plants were in a position to take advantage of the copious rainfalls of March, April, and May, creating quite a spring-like growth that lasted until the middle of June, when colder nights began that checked the growth of vegetation. From the 1st May, grass temperatures have been taken nightly; the nearest approach of frost being on the 20th of June, when the thermometer read 32·5.

Following is a list of the rainfall registered each month, the amount for the corresponding month of the previous year being in parentheses: —July, 14 (53); August, 136 (95); September, 165 (489); October, 130 (161); November, 182 (1,235); December, 59 (512); January, 14 (791); February, 47 (224); March, 641 (302); April, 222 (185); May, 681 (181); June, 84 (12); total, 2,475 (4,241); number of days rain fell, 87 (117).

RIVER BANK IMPROVEMENTS.

This work was carried to a satisfactory conclusion—as far as grading the river bank and the filling up of the old cricket ground is concerned—in November last. About 11,000 square yards of material were removed and carried, per portable tramline, at a cost of about 1s. 10d. per yard. Considering the distance—varying as it did from a half to three-quarters of a mile—the cost was reasonable, and the estimate given at the commencement of the work of £1,000 was only exceeded by a few pounds. This is accounted for by the building of a flight of 34 stone steps, 20 feet in length, with a 12-inch tread and about 7-inch rise. The stone used was formerly a portion of the old Government House Lodge, that was demolished on the establishment of the University. The estimate was also increased by the grading of the river bank being continued round the whole length of the Domain; many unsightly holes, particularly near the University boatshed, were filled up, and a 12-feet path on the river wall carried to the naval parade ground fence, completing an important and useful work that amply justifies doing by the very much improved appearance of the Domain and Gardens river bank from both the land and river. The greater portion of the new bank has been planted with grass, but, owing to the very dry summer experienced, a good covering turf has not grown; after the topdressing now being done and with favourable weather, it should soon have a very satisfactory appearance.

GENERAL IMPROVEMENTS.

Flower beds have been formed and planted in the centre of the newly filled-up ground, and I propose to plant over most of the other portion with palms, trees, and shrubs; the object being more to enlarge our botanical collection of plants than to duplicate those already in the Gardens. With this object in view, I am obtaining large additions to our collection. The filling of this land—ranging as it did from 1 to 4 feet—has naturally settled somewhat unevenly. This is being remedied by top-dressing, and in a few months a good fairly even turf will result.

The hardwood path edgings—having decayed badly on many of the principal paths—are now being replaced as opportunity offers. The high price of timber will not permit of all that require doing being done at present; but the most necessary are now in hand, preparatory to the asphalting of the walks. This latter work is very urgent, and must receive attention in the near future.

A number of the metal name-plates for plant-naming have been delivered and placed in position; they are of cast white metal, 5½ by 3½ inches, with raised ½-inch letters, and should be of a very permanent character, there being nothing to rust or decay. It is proposed to continue this work as funds permit until all plants are labelled; the smaller used will be of zinc with written names.

PLANT DISTRIBUTION.

Owing to the influenza epidemic and the shipping difficulty, the number of plants distributed to State schools shows a falling off. This only means delay, as will be shown in next year's returns. Local Authorities and Public Institutions have also been affected by the shipping trouble holding up Northern requirements, but will show large increases later, chiefly owing to funds granted by the Repatriation Department to Local Authorities to provide work for returned soldiers being in many instances used for tree-planting. Although this entails a good deal of work and expense, it enables Country Local Authorities and Public Institutions in many outlying districts of the State to beautify their localities by the planting of suitable trees. Plants were distributed as follows:—280 State schools received 1,415 plants for Arbor Days; Gatton College and State Farms, 364; other Government Departments, 260; Local Authorities, 486; churches and schools, 183; progress associations, 76; hospitals, 108; recreation reserves, 71; general exchanges, 839; total, 3,792.

EXCHANGES.

The oversea exchanges are gradually improving, owing to the relaxation of war conditions; and seeds of a useful nature have been received from and despatched to the West Indies, South Africa, Ceylon, India, Malay States, and Hawaii. Local and Southern exchanges have also been well maintained.

Electric Lighting of Gardens.

The installation of half-watt metal filament lamps, replacing the arc lamps, was completed for the opening at night for the summer months, and proved a great success. A large saving in current has resulted, also expense regarding carbons. Although the light has not the fine, soft effect of the arc lamp's rays, this is more than compensated for by the steadier bright light and immunity from carbon and magazine troubles, the jamming of the latter making constant attention necessary. From the beginning of October until the first week in May the Gardens were open on Friday, Saturday, and Sunday nights. Very few visitors attended on week nights; but on Sunday nights the attendances were very large. The lamp on the Alice street side of the new ground has been moved to the centre, and an additional lamp erected near the Edward street entrance; these alterations will provide good lighting for the new portion.

Band Concerts.

These were held regularly on Sunday afternoons throughout the year; also, on Sunday nights when the Gardens were open. They attract large numbers of visitors, who apparently greatly enjoy listening to the music provided by the six bands—Brisbane Concert, Excelsior, Federal, Ithaca Concert, Metropolitan Union, and Tramways—who played in rotation. The Ipswich Vice-Regal Band, who provided a most enjoyable programme on one occasion, was also highly appreciated by a very large audience. A regrettable feature of the band concerts is the large amount of papers and rubbish thrown about the lawns by many thoughtless visitors.

Zoological Collection.

Large additions to our collection were made during the year, and the accommodation provided has become overtaxed. The rearrangement of yards and aviaries is very necessary. Many generous donations of birds and animals have been received; and I desire to record my thanks and appreciation to those donors who have assisted by their gifts to enlarge the collection of native birds and animals; those received were:—3 native companions, 3 wallaroos, 2 kangaroos, several wallabies, 2 pelicans, 2 cassowaries, 3 black swans, 3 monkeys, 1 scrub turkey, 2 blue cranes, 2 spoonbills, 4 seagulls, an emu, and a collection of finches. Exchanges were made with the Sydney Zoological Gardens; others with the Melbourne Zoological Gardens have been delayed, owing to the influenza epidemic and shipping troubles.

Latrines.

These are largely availed of by the general public, and the accommodation provided is considerably overtaxed on holidays. The question of enlargement must be considered in the near future. Considerable benefit would also result by the installation of septic tanks or the city sewerage system. The turnstiles showed that over 38,000 adults, besides children, passed through during the year.

Domain Sports Ground.

This has been largely used, particularly during the football season; about seven clubs use it for training purposes; and matches are played regularly each Saturday. The University and Technical College girls' hockey clubs also regularly use a portion of the grounds.

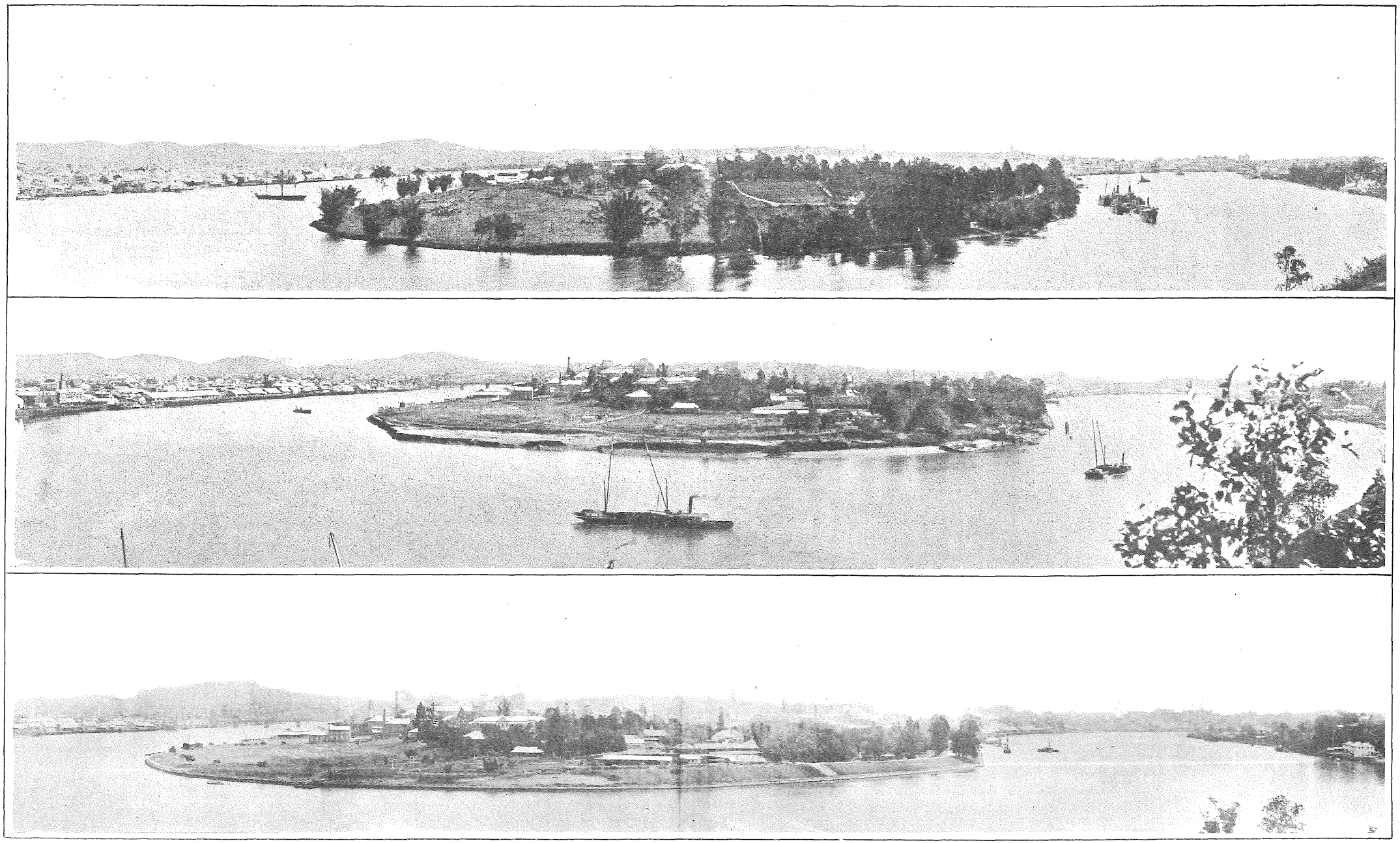
Children's Playgrounds.

These are still largely patronised by the children during the week-ends and holidays. A few minor accidents have occurred, chiefly owing to the careless use of the seesaws and swings.

Staff.

I desire to express my appreciation of the good work done and the loyal support accorded me by the staff. For the river bank improvement work a special gang, composed chiefly of returned soldiers, was employed, and did excellent work. T. Crellin, of the Gardens Staff, was appointed working foreman of this special gang, and, by his energy and knowledge, contributed largely to the successful carrying out of this important work.

E. W. BICK, Curator.



VIEW OF GOVERNMENT DOMAIN AND BOTANIC GARDENS, SHOWING IMPROVEMENTS.

1. Before Alterations.

2. Cutting Away in Progress.

3. Finished and Wall Built.

REPORT OF THE GOVERNMENT STATISTICIAN ON LIVE STOCK FOR THE YEAR 1918.

LIVE STOCK.

A.

Year.	Horses.	Cattle.	Sheep.	Swine.
1917	733,014	5,316,558	17,204,268	172,699
1918	759,726	5,786,744	18,220,985	140,966
Numerical Increase in 1918	26,712	470,186	1,016,717	...
Numerical Decrease in 1918	...	...	...	31,733
Centesimal Increase in 1918	3·64	8·84	5·91	...
Centesimal Decrease in 1918	...	...	...	18·37

A a.

SHOWING the NUMBER of HORSES, CATTLE, SHEEP, and SWINE in the STATE—RETURN for TEN YEARS.

Year.	Horses.	Cattle.	Sheep.	Swine.
1909	555,613	4,711,782	19,593,791	124,803
1910	593,813	5,131,699	20,331,838	152,212
1911	618,954	5,073,201	20,740,981	173,902
1912	674,573	5,210,891	20,310,036	143,695
1913	707,265	5,322,033	21,786,600	140,045
1914	743,059	5,455,943	23,129,919	166,638
1915	686,871	4,780,893	15,950,154	117,787
1916	697,517	4,765,657	15,524,293	129,733
1917	733,014	5,316,558	17,204,268	172,699
1918	759,726	5,786,744	18,220,985	140,966

A b.

Year.	Horses.	Cattle.	Sheep.	Swine.
1909	6·86	9·03	6·78	0 04
1910	6·88	8·91	3·77	21·96
1911	4 23	— 1·14	2·01	14·25
1912	8·99	2·71	— 2·08	— 17·37
1913	4·85	2·13	7·27	— 2·54
1914	5·06	2·52	6·17	18·99
1915	— 7·56	— 12·37	— 31·04	— 29·31
1916	1·55	— 0·32	— 2·67	10·14
1917	5·09	11·56	10·82	33·12
1918	3·64	8·84	5·91	— 18·37

— Decrease.

A c.

IN CONVERTING HORSES AND CATTLE TO TERMS OF SHEEP, TEN HEAD OF SHEEP ARE TAKEN AS EQUAL TO ONE HORSE OR HEAD OF CATTLE.

Pastoral District.	Area in Acres.	Centesimal Ratio of Area of District to Area of State.	HORSES.		CATTLE.		SHEEP.		ALL KINDS IN TERMS OF SHEEP.	
			Acres per Head.	Number per Square Mile.	Acres per Head.	Number per Square Mile.	Acres per Head.	Number per Square Mile.	Acres per Head.	Number per Square Mile.
Burke	65,383,040	15·24	1,131	0·57	81	7·92	32	19·87	6·11	104·69
Burnett	7,972,480	1·86	167	3·83	19	34·33	906	0·71	1 67	382·35
Cook	63,601,920	14·82	1,228	0·52	142	4·50	277,738	0·002	12·75	50·19
Darling Downs ...	16,249,600	3·79	190	3·36	35	18·33	13	48·68	2·41	265·60
Gregory North ...	54,266,240	12·64	1,872	0·34	185	3·46	30	21·42	10·77	59·41
Gregory South ...	31,617,920	7·37	2,103	0·30	220	2·91	80	8·01	15·95	40·13
Leichhardt ...	30,946,560	7·21	554	1·15	56	11·46	36	17·66	4·45	143·83
Maranoa	25,110,400	5·85	784	0·81	93	6·89	12	51·95	4·96	128·98
Mitchell	35,431,680	8·26	815	0·78	272	2·35	5	124·17	4·12	155·53
Moreton	5,649,920	1·32	68	9·37	11	58·22	518	1·24	0·95	677·05
North Kennedy ...	21,832,960	5·09	231	2·77	47	13·58	4,821	0·13	3·91	163·68
Port Curtis ...	8,994,560	2·09	167	3·83	22	29·07	619	1·03	1·94	330·02
South Kennedy ...	19,528,960	4·55	458	1·40	55	11·57	88	7·25	4·67	136·96
Warrego	37,333,760	8·70	1,385	0·46	176	3·63	14	46·49	7·32	87·43
Wide Bay ...	5,200,000	1·21	126	5·06	18	36·40	1,283	0·50	1·54	415·14
STATE ...	429,120,000	100·00	565	1·13	74	8·63	24	27·17	5·13	124·81
Number per Capita Population ...			1·09		8·33		26·21		120·51	

The following table shows, from the latest information available, the live stock density in various countries :—

	Live Stock in Terms of Sheep per Square Mile.
Queensland	125
New South Wales	233
Victoria	421
United Kingdom	1,437
Germany	1,157
Argentine	342
United States of America	324
Russia in Europe	318
Union of South Africa	218

A d.

RETURN SHOWING NUMBER OF HORSES, CATTLE, SHEEP, AND SWINE IN THE SOUTHERN, CENTRAL, AND NORTHERN DIVISIONS OF THE STATE FOR THE YEAR 1918.

Division.	Horses.	Cattle.	Sheep.	Swine.
Southern Division	338,166	2,428,365	6,423,021	121,188
Central Division	184,566	1,447,556	9,643,680	8,606
Northern Division	236,994	1,910,823	2,154,284	11,172
Total State	759,726	5,786,744	18,220,985	140,966

Horses.

A e.

Horses Imported during 1918.					Horses Exported during 1918.				
Country.	Number.		Value.		Country.	Number.		Value.	
Oversea—	...	...	£	£	*Oversea*—			£	£
					India	11,420	...	208,280	
					Papua	19	...	413	
					Bismarck Arch. ...	6	...	98	
					For military purposes	...	...	...	
							11,445		208,791
Interstate (by land)—					*Interstate (by land)*—				
New South Wales...	7,508	...	67,345	...	New South Wales ...	10,241	...	88,302	
South Australia ...	705	...	6,217	...	South Australia ...	561	...	4,492	
		8,213		73,562			10,802		92,794
Totals	...	8,213	...	73,562	Totals	...	22,247	...	301,585

A f.

Year.	Entire.	Other.	Total.
1909	7,304	548,309	555,613
1910	7,941	585,872	593,813
1911	8,505	610,449	618,954
1912	9,322	665,251	674,573
1913	9,691	697,574	707,265
1914	9,719	733,340	743,059
1915	8,629	678,242	686,871
1916	7,861	689,656	697,517
1917	7,762	725,252	733,014
1918	7,664	752,062	759,726

Cattle.

A g.

Sizes of Herds of Cattle.

1 to 100.		101 to 300.		301 to 1,000.		1,001 and Upwards.		Totals.	
Owners.	Cattle.	Owners.	Cattle.	Owners.	Cattle.	Owners.	Cattle.	Owners.	Cattle.
36,724	987,136	3,836	642,188	1,356	736,084	819	3,421,336	42,735	5,786,744

N.B.—For details of Sizes of Herds of Cattle in Pastoral Districts, see Appendix Table No. V.

A h.

Year.	Number of Owners.	Number of Cattle.	Average Size of Herd.
1909	32,230	4,711,782	146
1910	33,955	5,131,699	151
1911	34,850	5,073,201	146
1912	37,242	5,210,891	140
1913	38,136	5,322,033	140
1914	39,716	5,455,943	137
1915	40,051	4,780,893	119
1916	39,727	4,765,657	120
1917	40,664	5,316,558	131
1918	42,735	5,786,744	135

Sheep.

A j.

Sizes of Flocks of Sheep.

50 and Under.		51 to 500.		501 to 1,000.		1,001 to 2,000.		2,001 to 5,000.		5,001 to 10,000.	
Owners.	Sheep.	Owners.	Sheep.	Owners.	Sheep.	Owners.	Sheep.	Owners.	Sheep.	Owners.	Sheep.
1,140	19,753	826	176,881	354	274,564	419	646,788	519	1,761,902	327	2,385,750

10,001 to 20,000.		20,001 to 50,000.		50,001 to 100,000.		100,001 and Upwards.		Totals.	
Owners.	Sheep.	Owners.	Sheep.	Owners.	Sheep.	Owners.	Sheep.	Owners.	Sheep.
237	3,402,384	148	4,689,314	49	3,440,722	11	1,422,927	4,030	18,220,985

N.B.—For details of Sizes of Flocks of Sheep in Pastoral Districts, see Appendix Table No. VI.

A k.

Year.	Number of Owners.	Number of Sheep.	Average Size of Flocks.
1909	2,888	19,593,791	6,785
1910	3,082	20,331,838	6,597
1911	3,119	20,740,981	6,650
1912	3,224	20,310,036	6,300
1913	3,365	21,786,600	6,474
1914	3,719	23,129,919	6,219
1915	4,091	15,950,154	3,899
1916	3,986	15,524,293	3,895
1917	4,008	17,204,268	4,292
1918	4,030	18,220,985	4,521

A l.

——	1917.	1918.
Total Sheep as per Stock Returns on 1st January, 1917 and 1918 ..	15,524,293	17,204,268
Ewes mated with Rams	6,545,209	7,587,417
Lambs Dropped	4,067,987	4,038,680
Percentage of Lambing	62·15	53·23
Purchases	2,877,416	3,086,904
Sales	3,586,183	3,584,631
Total Losses	1,485,042	2,280,379
Killed for Food on Holding	194,203	243,857
Total Sheep as per Wool Returns on 31st December, 1917 and 1918 ..	17,204,268	18,220,985
Skins obtained during Year	192,323	243,053

A m.

—	Cattle.		Sheep and Lambs.	
	1917.	1918.	1917.	1918.
Exported, less number imported alive Oversea	26	66	196	23
„ „ „ „ Overland, 12 months	60,823	46,947	403,593	270,492
Preserved, frozen, and boiled down	421,281	334,012	261,836	169,126
Estimated number killed for food for home consumption	161,673	164,725	428,069	373,353
Totals	643,803	545,750	1,093,694	812,994

N.B.—This Table does not include Interstate Traffic by Sea in live animals; this is unascertainable, but insignificant in number.

A n.

Year.	Cattle.		Sheep.	
	Inwards.	Outwards.	Inwards.	Outwards.
	Number.	Number.	Number.	Number.
1909	41,804	145,591	178,719	909,007
1910*	67,587	122,774	314,779	685,419
1911	45,225	133,519	412,152	613,998
1912	55,482	144,803	288,523	551,446
1913	55,402	131,634	204,045	843,028
1914 Overland, 12 months ...	49,632	109,591	404,530	827,178
1914 Oversea, 6 months	6	46	...	2,312
1915 Overland, Calendar year ...	47,065	93,309	227,853	938,785
1915 Oversea, Financial year ...	74	81	1,766	388
1916 Overland, Calendar year ...	47,765	69,096	172,955	420,791
1916 Oversea, Financial year ...	13	3	...	447
1917 Overland, Calendar year ...	36,729	97,552	73,185	476,778
1917 Oversea, Financial year ...	12	38	6	202
1918 Overland, Calendar year ...	55,048	101,995	205,763	476,255
1918 Oversea, Financial year ...	...	66	9	32

* Interstate Coastwise Traffic no longer available.

A o.

Kind of Establishment.	Number.	Number of Hands Employed.	Value of Machinery and Plant.	Value of Land and Premises.	Value of Output.
			£	£	£
Bacon Curing	7	459	58,299	105,226	1,172,207
Meat Preserving	14	4,620	796,628	1,415,030	6,063,897
Totals	21	5,079	854,927	1,520,256	7,236,104

A p.

Petty Sessions District.	Swine Slaughtered.	Fresh Pork.	Salt and Preserved Pork.	Bacon and Hams.
	Number.	Lb.	Lb.	Lb.
Brisbane*	147,020	35,197	3,178	12,278,418
Bundaberg	337	5,892	13,684	10,314
Clifton	421	3,779	20,825	22,270
Crow's Nest	427	1,490	892	40,149
Dalby	797	8,726	8,633	68,409
Dugandan	359	4,883	8,326	21,725
Gatton	278	2,490	9,741	12,728
Gayndah	381	4,182	5,862	29,580
Gladstone	489	10,998	24,429	10,305
Gympie	408	7,243	15,040	9,866
Herberton	955	44,865	20,394	4,229
Laidley	301	2,261	21,894	15,134
Logan	476	2,425	40,822	22,880
Maroochy	396	23,632	250	14,705
Maryborough	7,463	3,296	9,486	444,983
Nanango	921	18,822	18,100	37,255
Oakey	316	1,811	2,016	30,238
Pittsworth	459	6,893	9,669	22,248
Rockhampton	2,617	14,639	15,607	149,255
Roma	344	8,593	9,568	8,152
Stanthorpe	365	3,020	7,758	25,925
Toowoomba	30,542	1,465	10,288	2,512,387
Warwick	5,040	5,972	11,420	402,751
Wienholt	626	12,493	22,090	24,393
All other Districts	6,760	196,050	149,113	258,181
Totals, 1918	208,498	431,167	459,085	16,476,480
„ 1917	170,490	315,493	493,025	14,791,540

N.B.—Returns received from Inspectors of Slaughter-houses for 1918 account for 33,527 swine killed, producing 3,118,720 lb. of fresh pork in addition to the above. In a few instances it is possible that some of these have been also included in the returns from which this table is compiled, but to what extent it is impossible to determine.

* Including South Brisbane.

WOOL.

A q.

Production of Wool.	1909.	1910.	1911.	1912.	1913.
Number of sheep shorn	18,439,937	19,192,619	20,037,491	19,969,378	20,289,124
Result off Shears only, lb. net—					
Greasy wool	80,170,509	82,755,649	92,698,078	89,390,788	106,570,719
Scoured wool	21,491,099	23,276,963	21,051,636	19,816,854	19,699,752
Above expressed as "Greasy"	123,152,707	129,309,575	134,801,350	129,024,496	145,971,861
Average weight, lb.—					
Per Greasy bale	372	371	360	367	362
Per Scoured bale	235	234	232	226	227
Per Fleece in the Grease	6·68	6·74	6·73	6·46	7·19
Total wool production (Greasy), including quantity fellmongered, exported on skins, and utilized lb.	**129,668,298**	**139,250,802**	**142,382,269**	**136,878,270**	**154,183,114**
* Estimated value of production	£5,453,000	£5,908,000	£5,580,000	£5,561,000	£6,296,000

Production of Wool.	1914.	1915.	1916.	1917.	1918.
Number of sheep shorn	22,059,015	19,558,810	13,798,462	11,920,074	17,290,116
Result off Shears only, lb. net—					
Greasy wool	114,585,709	89,231,347	67,114,101	67,772,382	83,997,850
Scoured wool	17,159,546	17,671,445	14,717,559	7,310,368	12,475,776
Above expressed as "Greasy"	148,904,801	124,574,237	96,549,219	82,393,118	108,949,402
Average weight, lb.—					
Per Greasy bale	361	357	365	365	353
Per Scoured bale	221	219	238	239	235
Per Fleece in the Grease	6·75	6·37	7·00	6·91	6·30
Total wool production (Greasy), including quantity fellmongered, exported on skins, and utilized lb.	**155,478,740**	**130,783,277**	**102,220,125**	**87,425,558**	**113,777,272**
*Estimated value of production	£6,707,000	£5,122,000	£4,898,000	£5,646,317	£8,177,741

* Based on Oversea Export value.

A r.

Average Export Price of Wool.	1909.	1910.*	1911.*	1912.*	1913.*	1914.*	1915.*	1916.*	1917.*	1918.*
	Per lb.	Per lb.	Per lb.	Per lb.	Per lb.	Per lb.	Per lb.	Per lb.	Per lb.	Per lb.
Greasy wool ...	9½d.	10⅛d.	9²⁵/₆₄d.	9¾d.	9⁴⁵/₆₄d.	10⅛d.	9²⁵/₆₄d.	11⅛d.	15½d.	17¼d.
Scoured wool ...	17½d	18¼d.	16⅘d.	18¼d.	18½d.	19d.	18⅙d.	20¾d.	28½d	27d.

* Oversea only.

A s.

Exports of Wool.	Quantity.			Value.		
	Interstate.	Oversea.	Total.	Interstate.	Oversea.	Total.
	Lb. gross.	Lb. gross.	Lb. gross.	£	£	£
Greasy — 1914 (6 months only)	*	30,358,018	*	*	1,334,615	*
Greasy — 1914-15	*	78,206,793	*	*	3,058,035	*
Greasy — 1915-1916	*	52,620,768	*	*	2,511,222	*
Greasy — 1916-1917	*	51,906,001	*	*	3,382,793	*
Greasy — 1917-1918	*	35,272,597	*	*	2,529,684	*
Scoured — 1914 (6 months only)	*	5,251,469	*	*	414,307	*
Scoured — 1914-15	*	17,589,369	*	*	1,335,150	*
Scoured — 1915-1916	*	16,268,471	*	*	1,410,708	*
Scoured — 1916-1917	*	16,901,805	*	*	2,019,060	*
Scoured — 1917-1918	*	8,972,507	*	*	1,011,748	*

* Not available.

A t.

Quantity Wool used in Manufacture.	1909.	1910.	1911.	1912.	1913.	1914.	1915.	1916.	1917.	1918.
	Lb.	Lb.	Lb.	Lb.	Lb.	Lb.	Lb.	Lb.	Lb.	Lb.
Scoured wool ...	150,539	135,123	168,243	291,946	203,415	160,449	202,262	241,600	223,695	262,393

A u.

EXPORTS OVERSEA, QUEENSLAND.

Value of—	1916-17. HOME PRODUCE ONLY. Total Exports.	1916-17. HOME PRODUCE ONLY. Percentage to Total Exports.	1917-1918. HOME PRODUCE ONLY. Total Exports.	1917-1918. HOME PRODUCE ONLY. Percentage to Total Exports.
	Oversea	Only.	Oversea	Only.
	£		£	
Agricultural Products	1,713,766	11·80	1,825,950	16·82
Pastoral ,, ...	12,322,028	84·88	8,722,974	80·36
Mineral ,, ...	172,585	1·19	86,832	0·80
Other ,, ...	308,578	2·13	218,712	2·02
Totals	£14,516,957	100·00	£10,854,468	100·00

A v.

EXPORTS OVERSEA, QUEENSLAND.

Value of—	1916-17. HOME PRODUCE ONLY. Exports Oversea.	1917-18. HOME PRODUCE ONLY. Exports Oversea.	Increase or —Decrease, 1917-18.
Pastoral Products —	£	£	£
Wool	5,401,853	3,541,432	— 1,860,421
Live stock	185,827	200,137	14,310
*Meat (all kinds, including Extract)	5,779,394	4,175,182	— 1,604,212
Tallow	476,604	321,905	— 154,699
Hides and skins	304,258	199,991	— 104,267
All other	174,092	284,327	110,235
Totals	12,322,028	8,722,974	— 3,599,054

* Exclusive of Bacon, Poultry, &c., these being treated as products of Agriculture.

GOATS (COMMON).

A w.

	Number Depastured.	Number Killed.	Weight: Lb.
1909	165,362 ...	38,078 ...	1,020,706
1910	168,339 ...	36,978 ...	952,460
1911	149,804 ...	33,791 ...	898,397
1912	155,010 ...	37,044 ...	974,430
1913	148,006 ...	35,541 ...	978,244
1914	134,967 ...	31,471 ...	831,932
1915	126,730 ...	35,153 ...	880,352
1916	119,645 ...	28,992 ...	791,321
1917	129,173 ...	27,700 ...	731,591
1918	124,964 ...	26,375 ...	719,033

Angora Goats.

A x.

Year.	Number of Animals.	Mohair Obtained.	Skins Obtained.	Number Killed for Meat.
		Lb.		
1909	8,228	6,547	1,374	1,739
1910	9,088	7,096	1,753	1,823
1911	8,332	5,785	1,047	1,487
1912	6,924	6,770	1,342	1,388
1913	7,925	6,935	1,063	1,148
1914	5,543	3,427	632	687
1915	4,931	3,864	691	860
1916	4,462	4,012	587	577
1917	3,774	3,144	441	526
1918	3,569	2,188	411	501

Camels.

A y.

Year.	Number.
1909	534
1910	656
1911	1,023
1912	888
1913	751
1914	977
1915	855
1916	829
1917	874
1918	660

Ostriches.

A z.

Year.	Number.
1909	28
1910	28
1911	31
1912	35
1913	29
1914	32
1915	24
1916	18
1917	15
1918	3

Mules.

A z a.

Year.	Number.
1911	801
1912	742
1913	793
1914	900
1915	873
1916	1,009
1917	1,037
1918	1,094

Table No. I.

RETURN OF THE NUMBER OF HORSES, CATTLE, SHEEP, AND SWINE IN THE VARIOUS PETTY SESSIONS DISTRICTS OF THE STATE, TOGETHER WITH THE INCREASE AND DECREASE OF CATTLE AND SHEEP ON THE 31ST DECEMBER, 1918.

Petty Sessions District.	Horses.	Cattle.				Sheep.				Swine.
		1917.	1918.	1918.		1917.	1918.	1918.		
	1918.			Increase.	Decrease.			Increase.	Decrease.	1918.
Adavale	2,499	8,341	9,160	819	...	342,684	260,631	...	82,053	2
Allora	4,062	1,0673	12,272	1,599	...	10,593	13,231	2,638	...	2,893
Alpha	6,150	67,893	81,576	13,683	...	111,902	110,712	...	1,190	167
Aramac	2,856	5,552	7,649	2,097	...	375,009	307,618	...	67,391	6
Augathella	3,619	22,853	28,312	5,459	...	276,272	359,549	83,277	...	59
Ayr	10,481	25,445	26,953	1,508	...	261	70	...	191	715
Banana	4,377	52,333	47,751	...	4,582	10,417	7,887	...	2,530	72
Barcaldine	4,513	6,840	11,535	4,695	...	885,014	927,739	42,725	...	161
Beaudesert	4,795	64,738	64,206	...	532	1,618	1,832	214	...	5,073
Biggenden	4,043	35,318	33,244	...	2,074	234	252	18	...	770
Blackall	5,384	4,837	7,946	3,109	...	971,113	1,200,121	229,005	...	67
Bollon	4,398	42,383	62,770	20,387	...	249,462	404,030	154,568	...	27
Boulia	9,233	102,640	122,434	19,794	...	310,834	329,625	18,791	...	30
Bowen	13,896	120,141	128,634	8,493	...	819	748	...	71	520
Brisbane	11,987	20,581	20,943	262	...	1,478	609	...	869	3,885
Bundaberg	8,642	28,207	28,994	787	...	151	52	...	99	1,316
Burke	6,029	122,648	121,586	...	1,062	5,202	5,247	45	...	99
Caboolture	1,220	8,266	9,068	802	...	260	283	23	...	1,012
Cairns	4,524	6,892	7,594	702	...	100	5	...	95	553
Camooweal	5,342	66,187	66,818	631	...	...	...	...	...	5
Cape River	9,148	81,958	87,990	6,032	...	779	1,000	221	...	105
Cardwell	1,466	8,481	8,504	23	...	...	...	...	...	51
Charleville	7,233	50,654	68,282	17,628	...	592,017	705,998	113,981	...	276
Charters Towers	24,440	163,414	178,023	14,609	...	696	786	90	...	843
Childers	4,019	12,143	11,568	...	575	78	22	...	56	494
Chillagoe	9,156	35,199	35,587	388	...	...	...	...	...	122
Clermont	13,980	124,057	153,535	29,478	...	418,829	497,808	78,979	...	328
Cleveland	417	826	1,014	188	...	8	8	...	...	175
Clifton	7,044	14,443	16,512	2,069	...	33,726	28,797	...	4,929	3,483
Cloncurry	22,522	235,928	232,977	...	2,951	492,678	496,911	4,233	...	713
Coen	3,701	25,578	27,529	1,951	...	...	...	...	...	5
Condamine	4,644	40,830	38,349	...	2,481	5,536	4,538	...	998	633
Cook	4,915	26,759	30,796	4,037	...	...	...	...	...	328
Cooyar	1,914	7,997	9,358	1,361	...	963	571	...	392	675
Crow's Nest	3,315	18,086	19,083	997	...	384	411	27	...	3,520
Croydon	1,675	19,088	24,684	5,596	...	...	1	1	...	20
Cunnamulla	4,091	18,666	24,668	6,002	...	564,010	695,502	131,492	...	136
Dalby	16,849	100,719	124,593	23,874	...	342,803	291,918	...	50,885	4,663
Diamantina	4,986	54,645	64,694	10,049	...	22,536	7,571	...	14,965	...
Douglas	1,515	1,986	2,022	36	...	...	...	...	...	21
Dugandan	5,341	30,597	32,956	2,359	...	479	477	...	2	6,217
Eidsvold	6,944	82,138	86,099	3,961	...	3,194	3,124	...	70	282
Emerald	5,035	28,526	36,462	7,936	...	108,014	130,130	22,116	...	331
Esk	6,089	63,550	65,714	2,164	...	1,122	897	...	225	1,987
Etheridge	12,512	159,790	157,751	...	2,039	2	2	...	...	153
Eulo	1,016	18,639	14,324	...	4,315	50,809	60,345	9,536	...	21
Gatton	4,973	19,163	18,896	...	267	1,254	1,429	175	...	4,075
Gayndah	10,136	101,392	103,306	1,914	...	2,162	1,328	...	834	2,444
Gin Gin	5,198	47,885	49,911	2,026	...	335	275	...	60	678
Gladstone	20,140	187,527	193,844	6,317	...	2,557	2,486	...	71	2,096
Goodna	602	2,134	2,336	202	...	60	86	26	...	232
Goombungee	1,577	5,502	6,986	1,484	...	5,446	4,081	...	1,365	1,892
Goondiwindi	5,726	36,730	47,806	11,076	...	319,851	304,995	...	14,856	556
Gympie	9,300	97,992	107,459	9,467	...	2,666	2,361	...	305	5,591
Harrisville	3,717	20,914	19,962	...	952	758	546	...	212	3,429
Helidon	2,721	10,223	12,137	1,914	...	358	304	...	54	1,844
Herberton*	17,583	78,882	88,305	9,423	...	743	700	...	43	2,732
Highfields	1,591	6,906	8,373	1,467	...	653	417	...	236	1,519
Hughenden	10,892	77,165	96,677	19,512	...	736,786	718,175	...	18,611	214
Hungerford	606	3,034	3,041	10	...	30,099	56,383	26,284	...	2
Ingham	9,552	25,089	21,303	...	3,786	464	481	17	...	1,119
Inglewood	3,399	22,617	23,061	444	...	124,529	124,578	49	...	617
Ipswich	4,056	14,692	14,257	...	435	141	218	77	...	1,279
Isisford	5,583	6,913	7,107	194	...	746,269	800,887	54,618	...	27
Jondaryan	1,732	13,870	12,630	...	1,240	81,598	62,853	...	18,745	642
Jundah	2,658	11,398	15,663	4,265	...	214,680	188,791	...	25,889	11
Kilcoy	1,841	17,758	17,523	...	235	217	203	...	14	1,277
Kilkivan	1,887	19,817	17,334	...	2,483	459	407	...	52	393
Killarney	2,996	8,482	9,669	1,187	...	4,053	2,705	...	1,348	1,271
Laidley	4,248	15,202	16,810	1,608	...	339	244	...	95	2,506
Logan	2,841	12,962	14,055	1,093	...	212	226	14	...	1,299
Longreach	10,543	22,137	21,421	...	716	1,433,169	1,518,671	85,502	...	99
Lowood	2,499	16,610	16,547	...	63	290	199	...	91	2,277
Mackay	32,924	87,279	98,309	11,030	...	2,096	2,325	229	...	1,201
Maroochy	4,462	35,001	38,658	3,657	...	425	300	...	125	2,957
Maryborough	6,586	19,612	20,469	857	...	442	411	...	31	1,078
Mitchell	8,976	77,155	87,860	10,705	...	262,755	278,425	15,670	...	319
Mount Morgan	6,744	16,346	17,981	1,635	...	211	111	...	100	758
Mount Perry	3,143	22,004	25,673	3,669	...	87	51	...	36	206
Mourilyan	2,776	3,212	3,410	198	...	...	...	...	...	30
Muttaburra	6,556	19,090	22,696	3,606	...	1,475,110	1,421,373	...	53,737	15
Nanango	15,466	89,094	102,648	13,554	...	1,787	1,730	...	57	7,824
Nerang	2,914	29,000	33,463	4,463	...	1,313	509	...	804	2,639
Norman	9,934	303,213	325,910	22,697	...	...	3	3	...	3
Oakey	5,176	18,158	25,592	7,434	...	12,449	14,590	2,141	...	4,392
Palmer	2,530	55,255	46,765	...	8,490	...	...	...	...	6
Pittsworth	7,760	38,028	40,447	2,419	...	171,911	162,147	...	9,764	5,166
Proserpine	5,024	13,460	11,921	...	1,539	2,417	1,964	...	453	450
Quilpie	2,245	...	19,383	19,383	...	...	182,825	182,825	..	6
Ravenswood	4,436	19,334	19,262	...	72	...	...	...	...	98
Redcliffe	2,288	15,505	16,669	1,164	...	29	15	...	14	1,499
Richmond	11,079	96,977	109,727	12,750	...	1,315,324	1,192,003	...	123,321	86

Table No. I. – *continued.*

Petty Sessions District.	Horses.	Cattle.				Sheep.				Swine.
		1917.	1918.	1918.		1917.	1918.	1918.		
	1918.			Increase.	Decrease.			Increase.	Decrease.	1918.
Rockhampton	32,245	287,582	293,017	5,435	...	10,591	12,279	1,688	...	4,127
Roma	9,331	57,179	61,064	3,885	...	217,473	221,528	4,055	...	1,334
Rosewood	3,008	21,692	21,106	...	586	513	586	73	...	2,754
St. George	6,793	33,280	46,498	13,218	...	617,148	751,209	134,061	...	187
St. Lawrence	6,948	95,288	103,186	7,898	...	373	1,887	1,514	...	80
Somerset	354	836	804	...	32	...	...	...	...	5
Southport	644	1,977	2,394	417	...	26	50	24	...	160
Springsure	10,292	69,384	86,999	17,615	...	309,583	355,266	45,683	...	136
Stanthorpe	3,272	17,608	17,400	...	208	101,369	106,888	5,519	...	701
Surat	3,089	22,416	25,182	2,766	...	347,698	386,739	39,041	...	78
Tambo	3,778	11,465	14,971	3,506	...	463,171	558,809	95,638	...	52
Taroom	5,504	76,425	78,266	1,841	...	21,804	13,104	...	8,700	191
Texas	1,358	15,420	12,127	...	3,293	11,724	9,058	...	2,666	67
Thargomindah	10,635	112,433	116,022	3,589	...	173,967	142,555	...	31,412	73
Tiaro	4,481	48,329	47,164	...	1,165	557	448	...	109	817
Toowoomba	6,751	18,023	19,511	1,488	...	15,538	8,773	...	6,765	2,719
Townshend	1,750	7,503	8,043	540	...	16	13	...	3	2,402
Townsville	11,976	24,810	27,838	3,028	..	226	202	...	24	1,057
Warwick	10,846	43,142	48,669	5,527	...	97,419	96,428	...	991	4,400
Wienholt	11,251	100,419	107,512	7,093	...	2,403	2,686	283	...	6,526
Windorah	6,047	66,241	76,679	10,438	...	183,489	249,659	66,170	...	107
Winton	13,153	47,934	55,785	7,851	...	1,479,528	1,392,164	...	87,364	13
Woodford	1,857	17,519	19,119	1,600	...	684	448	...	236	730
Wynnum	916	1,386	1,698	312	...	133	158	25	...	253
Yeulba	1,481	10,083	9,906	...	177	242	179	...	63	129
Total in State, 1918	759,726	...	5,786,744	...	...	...	18,220,985	...	...	140,965
Total in State, 1917	733,014	5,316,558	...	...	...	17,204,268	...	...	...	172,699
Increase in 1918	26,712	...	...	470,186		...	...	1,016,717		...
Decrease in 1918	...	...	...	...		...	...	...		31,733
Centesimal Increase in 1918 ...	3·64	...	...	8·84		...	...	5·91		...
Centesimal Decrease in 1918 ..	...	...	...	...		...	...	...		18·37

* The area comprising the Atherton portion of Herberton Petty Sessions District contains, approximately, 3,557 horses, 30,315 cattle, 117 sheep, and 1,936 swine.

Table No. II.

NUMBER OF CALVES RETURNED AS BRANDED DURING THE YEAR 1918.

Petty Sessions District.	Male.	Female.	Petty Sessions District.	Male.	Female.
Adavale	535	536	Ingham	2,064	2,059
Allora	1,207	1,303	Inglewood	2,115	2,085
Alpha	8,501	8,741	Ipswich	783	941
Aramac	814	801	Isisford	743	740
Augathella	2,366	2,265	Jondaryan	1,141	1,252
Ayr	2,749	2,635	Jundah	2,318	2,351
Banana	5,008	5,101	Kilcoy	1,211	1,264
Barcaldine	1,018	912	Kilkivan	1,477	1,565
Beaudesert	3,661	3,870	Killarney	854	885
Biggenden	2,928	2,972	Laidley	1,154	1,373
Blackall	596	593	Logan	513	1,293
Bollon	4,412	4,325	Longreach	2,999	3,133
Boulia	16,054	15,000	Lowood	1,289	1,260
Bowen	15,404	15,452	Mackay	10,926	10,860
Brisbane	485	1,720	Maroochy	2,493	3,545
Bundaberg	2,413	2,892	Maryborough	1,531	1,693
Burke	14,723	15,068	Mitchell	9,871	10,218
Caboolture	718	812	Mount Morgan	1,384	1,435
Cairns	519	515	Mount Perry	2,121	2,122
Camooweal	8,109	8,078	Mourilyan	241	245
Cape River	11,777	12,199	Muttaburra	1,939	1,899
Cardwell	598	632	Nanango	9,527	9,942
Charleville	4,869	4,828	Nerang	1,700	2,432
Charters Towers	22,774	22,826	Norman	35,821	35,639
Childers	779	836	Oakey	2,453	2,581
Chillagoe	3,583	3,508	Palmer	5,771	5,767
Clermont	17,343	17,606	Pittsworth	3,419	3,731
Cleveland	61	101	Proserpine	1,305	1,374
Clifton	1,686	1,880	Quilpie	1,633	1,628
Cloncurry	30,722	31,863	Ravenswood	1,629	1,640
Coen	2,768	2,645	Redcliffe	876	1,624
Condamine	3,818	3,876	Richmond	9,609	9,317
Cook	3,028	3,192	Rockhampton	32,310	31,965
Cooyar	1,060	1,067	Roma	6,882	7,201
Crow's Nest	1,857	1,833	Rosewood	1,197	1,275
Croydon	3,071	3,058	St. George	3,753	3,630
Cunnamulla	1,998	2,106	St. Lawrence	9,641	9,540
Dalby	13,034	13,153	Somerset	14	12
Diamantina	8,340	8,164	Southport	183	281
Douglas	143	174	Springsure	10,694	10,732
Dugandan	2,214	2,665	Stanthorpe	1,118	1,157
Eidsvold	8,083	7,591	Surat	2,064	2,084
Emerald	3,479	3,455	Tambo	1,536	1,332
Esk	3,970	4,318	Taroom	7,921	7,869
Etheridge	20,365	20,219	Texas	772	736
Eulo	1,607	1,781	Thargomindah	14,984	14,868
Gatton	1,342	1,503	Tiaro	4,516	4,667
Gayndah	8,262	8,430	Toowoomba	1,838	2,157
Gin Gin	4,977	4,913	Townshend	1,057	1,241
Gladstone	17,648	17,517	Townsville	2,879	2,912
Goodna	140	220	Warwick	3,800	3,888
Goombungee	642	661	Wienholt	8,959	9,470
Goondiwindi	4,659	4,881	Windorah	11,855	12,253
Gympie	6,749	8,561	Winton	8,073	7,734
Harrisville	1,421	1,752	Woodford	1,417	1,697
Helidon	880	959	Wynnum	65	120
Herberton	9,004	8,878	Yeulba	996	1,035
Highfields	579	783			
Hughenden	9,354	9,026	Totals	592,720	605,403
Hungerford	382	403			

Table No. III.

RETURN OF THE NUMBER OF HORSES, CATTLE, SHEEP, AND SWINE IN THE VARIOUS PASTORAL DISTRICTS OF THE STATE FOR THE YEARS 1917 AND 1918, TOGETHER WITH THE NUMERICAL AND CENTESIMAL INCREASE OR DECREASE IN THE LATTER YEAR.

Pastoral District.	Year.	Horses.	Cattle.	Sheep.	Swine	Numerical Increase or Decrease —				Centesimal Increase or Decrease —			
						Horses.	Cattle.	Sheep.	Swine.	Horses.	Cattle.	Sheep.	Swine.
Burke ...	1917	56,085	778,515	2,139,014	822	...	...	...	...	...	...	...	...
	1918	57,788	808,748	2,029,690	1,067	1,703	30,233	—109,324	245	3·04	3·88	— 5·11	29·81
Burnett ...	1917	47,030	402,081	9,496	22,435	...	...	...	...	...	...	...	...
	1918	47,721	427,688	8,799	17,697	691	25,607	— 697	—4,738	1·47	6·37	— 7·34	—21·12
Cook ...	1917	50,936	431,844	216	4,761	...	...	...	...	...	...	...	...
	1918	51,784	446,939	229	3,375	848	15,095	13	—1,386	1·66	3·50	6·02	—29·11
Darling Downs	1917	80,705	413,241	1,339,242	40,081	...	...	...	...	...	...	...	...
	1918	85,292	465,461	1,236,064	35,616	4,587	52,220	—103,178	—4,465	5·68	12·64	— 7·70	—11·14
Gregory North	1917	25,507	253,649	1,881,498	42	...	...	...	...	...	...	...	...
	1918	28,983	293,123	1,816,528	83	3,476	39,474	— 64,970	41	13·63	15·56	— 3·45	97·62
Gregory South	1917	13,757	135,815	334,488	62	...	...	...	...	...	...	...	...
	1918	15,037	143,612	395,915	112	1,280	7,797	61,427	50	9·30	5·74	18·36	80·65
Leichhardt ...	1917	53,191	511,538	719,774	1,581	...	...	...	...	...	...	...	...
	1918	55,820	554,300	853,725	1,824	2,629	42,762	133,951	243	4·94	8·36	18·61	15·37
Maranoa ...	1917	30,416	218,544	1,688,908	2,096	...	...	...	...	...	...	...	...
	1918	32,013	270,214	2,038,422	2,050	1,597	51,670	349,514	— 46	5·25	23·64	20·69	— 2·19
Mitchell ...	1917	42,944	121,572	6,642,483	548	...	...	...	...	...	...	...	...
	1918	43,459	130,154	6,874,100	448	515	8,582	231,617	— 100	1·20	7·06	3·49	—18·25
Moreton ...	1917	83,873	490,330	13,397	66,559	...	...	...	...	...	...	...	...
	1918	82,679	513,925	10,917	54,408	— 1,194	23,595	— 2,480	—12,151	— 1·42	4·81	— 18·51	—18·26
North Kennedy	1917	87,913	440,101	5,351	7,733	...	...	...	...	...	...	...	...
	1918	94,671	463,256	4,529	5,488	6,758	23,155	— 822	—2,245	7·69	5·26	— 15·36	—29·03
Port Curtis ...	1917	52,465	396,043	12,870	8,379	...	...	...	...	...	...	...	...
	1918	53,788	408,572	14,520	6,334	1,323	12,529	1,650	—2,045	2·52	3·16	12·82	—24·41
South Kennedy	1917	41,520	280,057	205,616	1,686	...	...	...	...	...	...	...	...
	1918	42,617	353,155	221,368	1,372	1,097	73,098	15,752	— 314	2·64	26·10	7·66	—18·62
Warrego ...	1917	25,164	157,407	2,207,173	625	...	...	...	...	...	...	...	...
	1918	26,963	211,814	2,712,126	622	1,799	54,407	504,953	— 3	7·15	34·56	22·88	— 0·48
Wide Bay ...	1917	41,508	285,821	4,742	15,289	...	...	...	...	...	...	...	...
	1918	41,111	295,783	4,053	10,470	— 397	9,962	— 689	—4,819	— 0·96	3·49	— 14·53	31·52

Table No. IV.

DISTRIBUTION OF LIVE STOCK IN THE STATE—RETURN FOR TEN YEARS.

(IN CONVERTING HORSES AND CATTLE TO TERMS OF SHEEP, TEN HEAD OF SHEEP ARE TAKEN AS EQUAL TO ONE HORSE OR HEAD OF CATTLE.)

Year.	Horses.			Cattle.			Sheep.			All Kinds in Terms of Sheep.		
	Acres per Head.	Number per Square Mile.	Number per Capita Population.	Acres per Head.	Number per Square Mile.	Number per Capita Population.	Acres per Head.	Number per Square Mile.	Number per Capita Population.	Acres per Head.	Number per Square Mile.	Number per Capita Population.
1909...	772	0·83	0·96	91	7·03	8·14	22	29·22	33·87	5·91	107·78	124·91
1910...	723	0·89	0·99	84	7·65	8·57	21	30·32	33·94	5·53	115·72	129·50
1911...	693	0·92	0·99	85	7·75	8·15	21	30·93	33·34	5·53	115·83	124·83
1912 ..	636	1·01	1·06	82	7·77	8·19	21	30·29	31·91	5·42	118·07	124·39
1913...	607	1·05	1·07	81	7·94	8·06	20	32·49	33·00	5·23	122·42	124·33
1914...	577	1·11	1·10	79	8·14	8·06	19	34·50	34·18	5·04	126·95	125·79
1915...	625	1·02	1·00	90	7·13	6·96	27	23·79	23·22	6·08	105·34	102·80
1916...	615	1·04	1·04	90	7·11	7·12	28	23·15	23·19	6·12	104·63	104·78
1917...	585	1·09	1·06	81	7·92	7·72	25	25·66	24·99	5·52	115·88	112·85
1918 ..	565	1·13	1·09	74	8·63	8·33	24	27·17	26·24	5·13	124·81	120·51

Table No. V.

SHOWING SIZES AND DISTRIBUTION OF HERDS OF CATTLE IN PASTORAL DISTRICTS.

Pastoral District.	100 and Under.		101 to 300.		301 to 1,000.		1,001 and Upwards.		Totals.	
	Owners.	Cattle.	Owners.	Cattle.	Owners.	Cattle.	Owners.	Cattle.	Owners.	Cattle.
Burke	367	11,805	94	16,583	82	50,567	90	729,793	633	808,748
Burnett	3,366	116,473	451	72,021	148	77,588	63	161,606	4,028	427,688
Cook	1,340	37,442	118	19,806	34	26,570	57	363,121	1,549	446,939
Darling Downs ...	6,931	195,588	666	110,765	170	85,146	36	73,962	7,803	465,461
Gregory North ...	130	3,450	24	4,258	25	15,562	41	269,853	220	293,123
Gregory South ...	74	2,462	16	3,208	11	6,084	28	131,858	129	143,612
Leichhardt	1,043	28,181	255	46,574	130	72,055	118	407,490	1,546	554,300
Maranoa	1,140	33,713	181	30,832	95	50,338	50	155,331	1,466	270,214
Mitchell	496	13,018	78	13,902	60	36,220	26	67,014	660	130,154
Moreton	11,023	285,140	774	122,986	141	64,668	24	41,131	11,962	513,925
North Kennedy ...	2,062	40,634	174	31,097	92	48,125	75	343,400	2,403	463,256
Port Curtis	2,379	63,842	310	52,883	139	81,672	76	210,175	2,904	408,572
South Kennedy ...	1,257	24,896	104	19,120	55	31,555	64	277,584	1,480	353,155
Warrego	423	12,227	100	17,996	75	41,658	47	139,933	645	211,814
Wide Bay	4,693	118,265	491	80,157	99	48,276	24	49,085	5,307	295,783
Totals ...	36,724	987,136	3,836	642,188	1,356	736,084	819	3,421,336	42,735	5,786,744

Pastoral and Petty Sessions Districts.

Pastoral District.	Petty Sessions District.
Burke ...	Burke
	Camooweal
	Richmond
	Cloncurry, part of
	Croydon, part of
	Hughenden, part of
	Norman, part of
Burnett	Eidsvold
	Gayndah
	Mount Perry
	Wienholt
	Biggenden, part of
	Gin Gin, part of
	Nanango, part of
Cook ...	Cairns
	Chillagoe
	Coen
	Cook
	Douglas
	Etheridge
	Mourilyan
	Palmer
	Somerset
	Croydon, part of
	Herberton, part of
	Norman, part of
Darling Downs	Allora
	Clifton
	Condamine
	Dalby
	Goombungee
	Goondiwindi
	Inglewood
	Jondaryan
	Killarney
	Oakey
	Pittsworth
Darling Downs—*continued*	Stanthorpe
	Texas
	Warwick
	Crow's Nest, part of
	Highfields, part of
	Toowoomba, part of
	Yeulba, part of
Gregory North	Boulia
	Winton
	Cloncurry, part of
	Diamantina, part of
	Windorah, part of
Gregory South	Adavale, part of
	Diamantina, part of
	Isisford, part of
	Jundah, part of
	Quilpie, part of
	Thargomindah, part of
	Windorah, part of
Leich'ardt	Banana
	Emerald
	Springsure
	Taroom
	Clermont, part of
	Mackay, part of
	Rockhampton, part of
	Roma, part of
	St. Lawrence, part of
Maranoa	Bollon
	Mitchell
	St. George
	Surat
	Roma, part of
	Yeulba, part of
Mitchell	Aramac
	Barcaldine
	Blackall
Mitchell —*contd.*	Longreach
	Alpha, part of
	Hughenden, part of
	Isisford, part of
	Jundah, part of
	Muttaburra, part of
	Tambo, part of
Moreton	Beaudesert
	Brisbane
	Caboolture
	Cleveland
	Cooyar
	Dugandan
	Esk
	Gatton
	Goodna
	Harrisville
	Helidon
	Ipswich
	Kilcoy
	Laidley
	Logan
	Lowood
	Nerang
	Redcliffe
	Rosewood
	Southport
	Townshend
	Wynnum
North Kennedy	Crow's Nest, part of
	Highfields, part of
	Maroochy, part of
	Nanango, part of
	Toowoomba, part of
	Woodford, part of
	Ayr
	Cardwell
North Kennedy —*contd.*	Charters Towers
	Ingham
	Proserpine
	Ravenswood
	Townsville
	Bowen, part of
	Cape River, part of
	Herberton, part of
Port Curtis	Gladstone
	Mount Morgan
	Rockhampton, part of
	St. Lawrence, part of
South Kennedy	Alpha, part of
	Bowen, part of
	Cape River, part of
	Clermont, part of
	Mackay, part of
	Muttaburra, part of
Warrego	Augathella
	Charleville
	Cunnamulla
	Eulo
	Hungerford
	Adavale, part of
	Quilpie, part of
	Tambo, part of
	Thargomindah, part of
Wide Bay	Bundaberg
	Childers
	Gympie
	Kilkivan
	Maryborough
	Tiaro
	Biggenden, part of
	Gin Gin, part of
	Maroochy, part of
	Woodford, part of

Table No. VI.

SHOWING SIZES AND DISTRIBUTION OF FLOCKS OF SHEEP IN PASTORAL DISTRICTS.

Pastoral District.	50 and Under.		51 to 500.		501 to 1,000.		1,001 to 2,000.		2,001 to 5,000.		5,001 to 10,000.		10,001 to 20,000.		20,001 to 50,000.		50,001 to 100,000.		100,001 and Upwards.		Totals.	
	Owners.	Sheep.	Owners.	Sheep.	Owners.	Sheep.	Owners.	Sheep.	Owners.	Sheep.	Owners.	Sheep.	Owners.	Sheep.	Owners.	Sheep.	Owners.	Sheep.	Owners.	Sheep.	Owners.	Sheep.
Burke	20	308	16	3,296	7	5,438	10	14,391	57	204,948	41	322,804	22	375,865	20	618,138	5	484,502	...	...	198	2,029,690
Burnett	75	1,284	21	2,097	1	740	1	1,900	1	2,778	...	...	...	...	...	...	...	...	...	...	99	8,799
Cook	7	78	2	151	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	9	229
Darling Downs	362	5,874	421	98,709	146	112,798	132	202,102	66	213,773	27	200,351	11	143,628	9	258,829	...	...	...	...	1,174	1,236,064
Gregory North	5	116	4	492	5	3,846	11	16,431	37	131,798	21	160,608	19	277,919	14	455,458	10	632,254	1	137,606	127	1,816,528
Gregory South	6	84	3	440	3	3,000	4	7,036	4	15,755	7	52,864	4	62,100	5	175,761	1	78,875	...	...	37	395,915
Leichhardt	70	1,361	67	15,087	50	39,648	56	86,824	39	123,797	16	117,892	5	68,379	8	293,738	2	106,999	...	...	313	853,725
Maranoa	68	1,444	111	28,286	86	66,434	94	136,875	98	316,437	51	351,302	38	508,953	15	434,581	3	194,110	...	...	564	2,038,422
Mitchell	26	519	29	5,395	25	19,327	34	55,941	117	400,194	110	781,842	100	1,425,923	53	1,656,742	21	1,475,913	8	1,052,304	523	6,874,100
Moreton	271	4,624	51	5,579	1	714	...	...	...	...	...	...	...	...	...	...	...	...	...	...	323	10,917
North Kennedy	28	396	13	2,543	2	1,590	...	...	...	...	...	...	...	...	...	...	...	...	...	...	43	4,529
Port Curtis	59	963	28	3,267	1	900	2	3,020	2	6,370	...	...	...	...	...	...	...	...	...	...	92	14,520
South Kennedy	5	138	17	2,634	2	1,517	16	26,661	8	26,054	5	34,082	2	30,090	1	30,192	1	70,000	...	...	57	221,368
Warrego	33	950	25	6,466	25	18,612	59	95,607	90	319,998	49	364,005	36	509,527	23	765,875	6	398,069	2	233,017	348	2,712,126
Wide Bay	105	1,614	18	2,439	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	123	4,053
Totals	1,140	19,753	826	176,881	354	274,564	419	646,788	519	1,761,902	327	2,385,750	237	3,402,384	148	4,689,314	49	3,440,722	11	1,422,927	4,030	18,220,985

Table No. VII.

RETURN for TEN YEARS of LIVE STOCK SLAUGHTERED for PRESERVATION as FOOD, or FREEZING, or for TALLOW, in the STATE, with the Quantity and Value of MEAT, TALLOW, LARD, ETC., Produced.

Year.	Number of Establishments.	Average Number of Hands Employed.	NUMBER SLAUGHTERED.								MEAT PRESERVED OR FROZEN.										Extract and Essence of Meat Produced.	Quantity of Tallow Produced.	Quantity of Lard Produced.	Total Value of all Products shown here.
			Cattle.			Sheep.			Lambs.	Swine.	Beef.			Mutton.			Lamb.		Bacon and Hams.	Pork, Salt and Fresh.				
			For Freezing.	For Preserving.	For Boiling Down.	For Freezing.	For Preserving.	For Boiling Down.			Frozen.	Fresh Preserved.	Salted.	Frozen.	Fresh Preserved.	Salted.	Frozen.	Fresh Preserved.						
										No.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	tons.	lb.	£
1909 ...	13	1,475	85,665	24,179	446	348,501	131,720	8,786	21,851	131,018	58,051,795	13,992,251	226,876	14,449,949	4,519,069	...	649,484	25,059	9,228,317	2,574,737	61,220	7,011	592,614	1,507,795
1910 ...	13	1,923	131,814	33,005	2,245	867,031	143,273	93,651	15,705	133,931	89,710,770	19,450,283	215,226	34,345,343	4,692,119	8,248	484,039	95	10,758,963	820,120	116,663	7,744	677,515	2,141,156
1911 ...	13	2,156	152,627	45,074	2,555	178,607	106,385	6,475	12,465	150,669	92,853,184	27,909,045	3,218,028	6,847,460	2,822,710	2,125	375,739	6,158	11,667,654	789,837	96,925	7,677	582,154	1,575,463
1912 ...	19	3,568	280,486	71,173	3,352	528,744	58,095	16,770	10,072	162,655	142,402,250	31,651,315	4,123,018	19,590,274	1,238,786	2,421	299,382	504	12,437,019	1,041,224	352,685	12,572	822,398	3,031,969
1913 ...	21	4,225	346,243	97,678	5,832	636,758	47,893	6,428	40,780	172,084	191,600,986	40,972,885	4,476,684	25,853,408	1,324,847	31,519	1,238,582	512	13,709,716	670,315	520,743	16,399	836,353	4,208,385
1914 ...	24	5,429	416,494	124,493	5,883	634,351	75,599	4,129	42,612	174,653	225,785,690	39,644,026	240,249	25,759,382	1,978,046	200	1,308,120	93	13,339,131	522,477	629,452	16,762	929,610	5,818,676
1915 ...	23	5,051	378,381	59,104	4,432	401,818	259,640	8,638	25,714	174,980	191,459,501	24,500,368	925,778	15,310,521	4,093,104	...	791,969	...	12,363,939	884,736	359,544	10,374	698,905	5,295,688
1916 ...	22	4,634	358,536	27,470	2,251	395,986	29,875	540	3,363	137,919	191,735,238	23,005,878	386,614	17,070,957	1,362,126	...	89,322	...	10,427,649	737,606	189,993	8,394	622,369	5,062,479
1917 ...	21	5,100	390,558	28,282	2,441	233,019	25,811	477	2,529	170,490	215,986,464	24,701,945	284,495	9,995,999	1,023,815	...	95,200	217	14,791,540	808,518	996,123	9,069	761,060	6,740,976
1918 ...	21	5,079	290,342	41,119	2,551	74,640	94,338	46	102	208,498	176,849,345	31,709,394	217,308	3,162,016	3,644,854	...	3,833	...	16,476,480	890,252	277,333	7,889	854,161	5,830,105

N.B.—17,533 swine killed by farmers and 1,618,640 lb. of pork and bacon made therefrom during 1918 are included in this table.

Table No. VIII.

RETURN showing the NUMBER of CATTLE, SHEEP, ETC., SLAUGHTERED for CONSUMPTION as FOOD in the STATE, together with the AVERAGE DEAD WEIGHT of each ANIMAL and the ESTIMATED QUANTITY CONSUMED PER CAPITA, for TEN YEARS, ending 31ST DECEMBER, 1918 (exclusive of Factories engaged in Slaughtering for Preservation).

Years.	Mean Population for the Year.	Number Slaughtered.					Average Dressed Weight.					Consumption per Capita.					
		Cattle.	Sheep.	Calves.	Lambs.	Swine.	Cattle.	Sheep.	Calves.	Lambs.	Swine.	Beef.	Mutton.	Veal.	Lamb.	Pork.	Total.
							lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.
1909	571,044	185,220	553,742	9,514	12,118	37,205	609	41	62	34	83	197·47	39·92	1·04	0·71	5·40	244·54
1910	592,201	198,862	617,961	12,588	13,530	34,651	626	43	66	36	85	210·21	43·83	1·40	0·82	4·97	261·23
1911	614,352	228,874	661,951	15,134	15,270	44,774	599	43	69	34	98	223·29	45·94	1·70	0·84	7·12	278·89
1912	631,577	228,250	643,897	17,068	15,754	49,978	580	44	76	35	84	209·47	44·67	2·05	0·88	6·62	263·69
1913	652,555	235,212	627,637	18,465	16,331	43,804	588	43	78	32	87	211·99	41·51	2·21	0·82	5·82	262·35
1914	674,932	215,703	578,038	14,296	16,416	40,178	584	42	76	34	86	186·51	35·65	1·62	0·82	5·14	229·74
1915	687,010	193,082	598,944	18,016	21,398	41,273	537	37	71	32	80	150·89	32·49	1·86	0·99	4·81	191·04
1916	677,630	178,375	459,716	11,570	20,135	27,405	570	43	67	36	88	150·01	29·50	1·15	1·06	3·54	185·26
1917	680,313	153,206	412,669	8,467	15,400	29,035	591	43	50	32	86	133·00	25·97	0·62	0·73	3·66	163·98
1918	688,547	159,066	359,688	5,659	13,665	39,588	576	43	47	29	81	133·00	22·61	0·38	0·57	4·65	161·21

Table No. IX.

OTHER PRODUCTS of MEAT PRESERVING, ETC., ESTABLISHMENTS in the STATE—RETURN for TEN YEARS.

Year.	No.	Hides.		Skins.		Edible Fats.		Bones.		Hoofs and Horns.	Hair.		Oils, &c.		Manure.		All Other Products.	Total Value.
		Number.	£	Number.	£	Lb.	£	Tons.	£	£	Lb.	£	Gallons.	£	Tons.	£	£	£
1909	11	118,398	151,586	565,236	100,246	1,180,503	19,466	172	1,130	2,905	48,788	935	10,171	1,093	2,323	11,015	24,941	313,317
1910	11	167,064	224,475	1,119,660	219,805	1,324,384	22,170	266	1,815	4,354	70,241	1,542	14,794	1,593	3,538	17,695	25,256	518,705
1911	12	200,296	244,228	303,932	76,716	534,466	9,255	348	2,558	4,733	76,882	1,670	14,265	1,649	4,372	22,694	29,348	392,851
1912	19	343,894	452,797	663,416	131,948	1,933,753	31,412	676	5,501	9,217	100,089	3,060	24,097	2,805	7,009	33,913	40,556	711,209
1913	21	456,919	695,491	789,889	194,155	4,060,968	64,713	1,072	9,176	10,291	134,376	4,271	34,467	4,410	8,751	45,095	53,621	1,081,223
1914	24	546,781	822,155	756,840	152,997	5,107,118	88,259	1,747	11,946	11,113	115,902	4,136	38,556	4,772	10,512	57,521	175,918	1,328,817
1915	23	449,925	704,202	718,737	125,176	4,455,300	122,714	849	8,335	7,611	108,284	4,080	32,244	4,265	9,016	48,131	214,560	1,239,074
1916	22	396,292	695,004	460,990	129,143	6,185,530	150,639	585	6,456	6,882	100,257	2,750	27,733	5,451	7,238	47,296	192,555	1,236,176
1917	21	426,610	948,747	290,170	98,547	9,132,507	337,043	648	11,431	8,805	118,839	3,302	23,669	4,439	6,602	50,136	284,259	1,746,709
1918	21	340,155	740,036	186,569	62,116	8,875,269	242,602	578	10,885	7,978	109,102	2,992	22,961	5,609	5,404	47,379	373,180	1,492,777

Table No. X.

RETURN SHOWING NUMBER OF SHEEP SHORN AND QUANTITY OF WOOL PRODUCED, TOGETHER WITH THE CLASSIFICATION OF SHEEP AND VALUE OF MACHINERY ON HOLDINGS FOR THE YEAR ENDED 31ST DECEMBER, 1917.

Pastoral District.	CLASSIFICATION OF SHEEP SHORN.						Lambs Unshorn.	Grown Sheep Unshorn.	Grand Total.	RESULT OF CLIP.						Total Production of Wool expressed as Greasy.	AVERAGE PER FLEECE IN THE GREASE.				Value of Machinery on Sheep Holdings.
	Ewes.	Wethers.	Weaners. and Hoggets.	Lambs.	Rams.	Total.				Greasy.		Average per Bale.	Scoured.		Average per Bale.		1915.	1916.	1917.	Increase or —Decrease 1917 over 1916.	
										Bales.	Lb.	Lb.	Bales.	Lb.	Lb.	Lb.	Lb.	Lb.	Lb.	Lb.	£
Burke ..	782,942	258,051	190,411	241,063	23,424	1,495,891	68,512	145,289	1,709,692	15,115	5,624,255	372	8,736	2,031,675	233	9,687,605	5·83	6·01	6·48	0·47	36,492
Burnett ..	1,881	1,304	827	53	44	4,109	115	1,272	5,496	75	23,619	315	..	..	..	23,619	7·24	5·64	5·75	0·11	65
Cook ..	68	20	..	54	1	143	..	..	143	2	594	297	..	..	..	594	4·51	4·39	4·15	—0·24	150
Darling Downs ..	474,233	274,795	123,702	65,931	8,076	946,737	33,307	40,023	1,020,067	19,192	6,286,160	328	32	7,319	229	6,300,798	6·30	7·37	6·66	—0·71	80,712
Gregory North ..	507,235	126,248	153,361	76,639	13,666	877,149	101,241	422,396	1,400,786	11,303	4,277,889	378	3,513	846,535	241	5,970,959	6·55	7·54	6·81	—0·73	56,930
Gregory South ..	33,942	9,117	15,078	950	851	59,938	3,817	92	63,847	1,128	358,747	318	65	15,800	243	390,347	5·38	6·92	6·51	—0·41	2,155
Leichhardt ..	267,921	87,027	59,875	44,197	8,326	467,346	19,555	22,130	509,031	8,042	2,723,038	339	446	127,558	286	2,978,154	6·18	6·30	6·37	0·07	43,676
Maranoa ..	741,690	304,226	135,283	129,532	17,462	1,328,193	68,772	95,720	1,492,685	25,100	8,943,170	356	1,114	254,717	229	9,452,604	6·84	6·56	7·12	0·56	70,635
Mitchell ..	2,532,095	759,166	944,852	532,719	71,208	4,840,040	195,109	315,427	5,350,576	75,399	27,979,664	371	12,109	2,920,475	241	33,820,614	6·25	7·32	6·99	—0·33	182,627
Moreton ..	4,029	601	655	498	117	5,910	445	291	6,646	120	31,677	264	..	..	..	31,677	5·42	5·90	5·36	—0·54	1,818
North Kennedy ..	2,077	614	23	113	30	2,857	465	1,343	4,665	36	10,064	280	..	..	..	10,064	4·15	6·90	3·52	—3·38	713
Port Curtis ..	7,444	2,277	1,265	253	84	11,323	88	2,916	14,327	173	56,542	327	2	483	242	57,508	5·48	4·99	5·08	0·09	475
South Kennedy ..	84,704	29,362	18,230	15,087	1,962	149,345	2,262	23,163	174,770	2,063	753,540	365	416	98,156	236	949,852	5·43	6·34	6·36	0·02	24,056
Warrego ..	960,648	227,114	191,995	324,241	24,736	1,728,734	87,120	56,060	1,871,914	27,853	10,691,230	384	4,147	1,007,650	243	12,706,530	6·93	6·89	7·35	0·46	130,164
Wide Bay ..	1,821	138	259	100	41	2,359	261	236	2,856	44	12,193	277	..	..	..	12,193	5·68	5·15	5·17	0·02	187
Totals ..	6,402,730	2,080,060	1,835,826	1,431,430	170,028	11,920,074	581,069	1,126,358	13,627,501	185,645	67,772,382	365	30,580	7,310,368	239	82,393,118	6·37	7·00	6·91	—0·09	630,855
Quantity of wool returned greasy but subsequently scoured										−2,729	−995,941	..	+2,028	+ 484,766							
Total Greasy										182,916	66,776,441										
Scoured										..	..	..	32,608	7,795,134							
Quantity of wool fellmongered during the year										..	..	..	6,557	1,567,214	..	3,918,035					
Total Scoured										..	..	..	39,165	9,362,348							
Estimated quantity wool on skins other than fellmongered during the year										..	..	..	..	..	..	1,114,405					
Total of all wool expressed as Greasy										..	..	..	..	..	..	87,425,558					

Table No. Xa.

RETURN SHOWING NUMBER OF SHEEP SHORN AND QUANTITY OF WOOL PRODUCED, TOGETHER WITH THE CLASSIFICATION OF SHEEP AND VALUE OF MACHINERY ON HOLDINGS FOR THE YEAR ENDED 31ST DECEMBER, 1918.

Pastoral District.	CLASSIFICATION OF SHEEP SHORN.						Lambs Unshorn.	Grown Sheep Unshorn.	Grand Total.	RESULT OF CLIP.						Total Production of Wool expressed as Greasy.	AVERAGE PER FLEECE IN THE GREASE.				Value of Machinery on Sheep Holdings.
	Ewes.	Wethers.	Weaners & Hoggets.	Lambs.	Rams.	Total.				Greasy.		Average per Bale.	Scoured.		Average per Bale.		1916.	1917.	1918.	Increase or —Decrease 1918 over 1917.	
										Bales.	Lb.	Lb.	Bales.	Lb.	Lb.	Lb.	Lb.	Lb.	Lb.	Lb.	£
Burke ...	1,071,999	560,569	263,783	235,421	24,980	2,156,752	14,237	29,765	2,200,754	16,768	5,833,483	348	15,180	3,466,652	228	12.766,787	6·01	6·48	5·92	—0·56	58,401
Burnett ...	4,434	1,523	190	332	122	6,601	671	243	7,515	117	33,275	284	...	...	...	33,275	5·64	5·75	5·04	—0·71	861
Cook	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4·39	4·15	...	...	...
Darling Downs	541,650	449,787	154,724	51,683	13,504	1,211,348	46,985	32,461	1,290,794	22,276	7,465,720	335	40	9,568	239	7,484,856	7·37	6·66	6·18	—0·48	116,872
Gregory North	1,014,856	314,166	281,302	181,897	23,984	1,816,205	74,221	80,769	1,971,195	20,374	7,042,805	346	9,479	2,187,594	231	11,417,993	7·54	6·81	6·29	—0·52	101,845
Gregory South	226,505	43,330	46,382	74,583	6,224	397,024	2,248	584	399,856	5,627	1,992,932	354	1,254	292,205	233	2,577,342	6·92	6·51	6·49	—0·02	9,170
Leichhardt ...	373,562	166,781	111,021	74,025	9,531	734,920	12,272	43,361	790,553	11,643	3,903,197	335	440	120,209	273	4,143,615	6·30	6·37	5·64	—0·63	52,297
Maranoa ...	916,441	350,722	224,284	250,767	20,939	1,763,153	80,240	67,080	1,910,473	31,139	11,244,866	361	1,042	275,040	264	11,794,946	6·56	7·12	6·69	—0·43	80,228
Mitchell ...	3,469,914	1,339,023	1,031,050	674,269	89,436	6,603,692	161,497	207,105	6,972,294	90,550	32,158,900	355	19,444	4,687,779	241	41,534,458	7·32	6·99	6·29	—0·70	226,372
Moreton ...	4,244	1,381	453	377	117	6,572	750	623	7,945	115	35,263	307	...	...	...	35,263	5·90	5·36	5·37	0·01	926
North Kennedy	2,501	736	353	170	66	3,826	152	330	4,308	60	18,020	300	...	...	...	18,020	6·90	3·52	4·71	1·19	748
Port Curtis ...	7,720	3,577	2,176	273	204	13,950	141	157	14,248	207	68,032	329	11	2,674	243	73,380	4·99	5·08	5·26	0·18	1,175
South Kennedy	83,612	71,068	16,489	14,635	1,977	187,781	888	8,254	196,923	2,703	985,397	365	71	18,875	266	1,023,147	6·34	6·36	5·45	—0·91	25,630
Warrego ...	1,187,603	292,425	457,057	417,057	32,097	2,386,239	83,336	109,533	2,579,108	36,145	13,204,986	365	6,223	1,415,180	227	16,035,346	6·89	7·35	6·72	—0·63	91,150
Wide Bay ...	1,298	279	287	163	26	2,053	194	72	2,319	37	10,974	297	...	...	...	10,974	5·15	5·17	5·35	0·18	11
Totals ...	8,906,339	3,595,367	2,589,551	1,975,652	223,207	17,290,116	477,832	580,337	18,348,285	237,761	83,997,850	353	53,184	12,475,776	235	108,949,402	7·00	6·91	6·30	—0·61	765,686
Quantity of wool returned greasy but subsequently scoured										— 8,131	—2,873,364	...	+ 6,002	+1,410,478							
Total Greasy										229,630	81,124,486										
Scoured										...	...	...	59,186	13,886,254							
Quantity of wool fellmongered during the year										...	...	...	6,403	1,504,800	...	3,762,000					
Total Scoured										...	...	...	65,589	15,391,054							
Estimated quantity wool on skins other than fellmongered during the year										...	...	...	...	...	...	1,065,870					
Total of all Wool expressed as Greasy										...	...	...	...	...	...	113,777,272					

Table No. XI.

RETURN SHOWING THE RESULTS OF LAMBING, LOSSES, KILLED FOR FOOD ON HOLDINGS, &c., IN THE SEVERAL PASTORAL DISTRICTS OF THE STATE FOR THE YEAR 1917.

Pastoral District.	Total Sheep as per Stock Returns on 1st Jan., 1917.	Ewes Mated with Rams.	Lambs Dropped.	Percentage of Lambing	Purchases.	Sales.	Losses and the Causes as Returned by Owners, and the Percentage to Total Losses from Each Cause.					
							Drought.		Flood.		Fly.	
							No.	%	No.	%	No.	%
Burke	2,016,516	854,223	460,999	53·97	193,344	282,355	25,720	10·98	49,705	21·21	52,111	22·24
Burnett	10,641	827	172	20·80	1,544	2,293	5	1·20	17	4·09	97	23·32
Cook	310	70	57	81·43	70	162	..	..	..	..	..	..
Darling Downs ..	1,436,245	397,463	216,830	54·55	388,240	517.018	43,532	27·05	8,259	5·13	37,223	23·13
Gregory North ..	1,845,851	707,305	427,717	60·47	122,843	336,610	15,047	9·20	23,225	14·20	35,635	21·79
Gregory South ..	244,368	29,376	14,189	48·30	89,066	9,477	..	..	..	..	500	19·54
Leichhardt ..	538.106	253,422	161,182	63·60	215,539	101,620	890	1·04	9,499	11·14	39,955	46·88
Maranoa	1,423,702	667,900	464,207	69·50	778,315	800,825	13,591	9·24	3,178	2·16	57,733	39·25
Mitchell	6,034,597	2,555,844	1,626,520	63·64	621,916	1,106,121	17,660	3·73	40,565	8·57	177,901	37·60
Moreton	18,372	3,296	1,935	58·71	1,336	6,104	241	15·57	79	5·10	46	2·97
North Kennedy ..	8,873	2,406	823	34·21	1,328	4,450	..	..	210	19·41	45	4·16
Port Curtis ..	21,271	4,772	3,111	65·19	4,659	13,898	600	29·69	14	0·69	550	27·21
South Kennedy ..	192,698	78,778	51,661	65·58	50,517	54,197	1,150	3·65	2,793	8·86	14,792	46·91
Warrego	1,727,627	987,946	637,710	64·55	408,500	350,263	6,427	3·55	5,355	2·96	88,487	48·87
Wide Bay	5,116	1,581	874	55·28	199	790	25	4·82	..	..	14	2·70
Totals ..	15,524,293	6,545,209	4,067,987	62·15	2,877,416	3,586,183	124,888	8·41	142,899	9·62	505,089	34·01

Pastoral District.	Losses and the Causes as Returned by Owners, and the Percentage to Total Losses from Each Cause.								Killed for Food on Holding.	Total Sheep as per Stock Returns on 31st Dec., 1917.	Skins Obtained during Year.
	Dingoes.		Old Age and Lambing.		Other. *		Total Losses and Percentage to Total Sheep.				
	No.	%	No.	%		No.	%	No.	%			
Burke	8,430	3·60	48,769	20·81	*a*	49,577	21·16	234,312	11·62	15,178	2,139,014	15,546
Burnett	145	34·85	96	23·08	*b*	56	13·46	416	3·91	152	9,496	123
Cook	2	9·52	1	4·76	*c*	18	85·72	21	6·77	38	216	24
Darling Downs ..	5,891	3·66	16,815	10·45	*d*	49,188	30·58	160,908	11·20	24,147	1,339,242	33,143
Gregory North ..	15,425	9·43	42,508	26·00	*e*	31,683	19·38	163,523	8·86	14,780	1,881 498	13 462
Gregory South ..	1,293	50·55	695	27·17	*f*	70	2·74	2,558	1·05	1,100	334,488	1,065
Leichhardt ..	7,369	8·64	10,682	12·53	*g*	16,857	19·77	85,252	15·84	8,181	719.774	7,492
Maranoa	15,029	10·22	27,726	18·85	*h*	29,828	20·28	147,085	10·33	29,406	1,688,908	25,724
Mitchell	66,996	14·16	102,980	21·76	*i*	67,088	14·18	473,190	7·84	61,239	6,642,483	55.425
Moreton	250	16·15	385	24·87	*j*	547	35·34	1,548	8·43	594	13,397	1,657
North Kennedy ..	263	24·31	344	31·79	*k*	220	20·33	1,082	12·19	141	5,351	190
Port Curtis ..	614	30·39	158	7·82	*l*	85	4·20	2,021	9·50	252	12,870	279
South Kennedy ..	7.027	22·28	4,276	13·56	*m*	1,494	4·74	31,532	16·36	3,531	205,616	3,673
Warrego	27,505	15·19	36,612	20·21	*n*	16,689	9·22	181,075	10·48	35,326	2,207,173	34,397
Wide Bay	130	25·05	87	16·76	*o*	263	50·67	519	10·14	138	4,742	123
Totals ..	156,369	10·53	292,134	19·67		263,663	17·75	1,485,042	9·57	194.203	17,204.268	192,323

* Causes included in "Other"—

a Bogged, bushfire, cancer, cold, killed by train, marking, natural, pigs, poison, rain, shearing;

b Spear grass, worms;

c Anæmia, cast, drenching, sarcosporidiosis, scrub tick, swelled head, worms;

d Accident, blight, blown, bushfires, cold, crows, cyanided, drenching, droving, drowned, dry feed, eaglehawks, excessive grain feed, foxes, hives, killed for pigs, lost, marking, missing, natural, poison-weed, shearing, smothered, strayed, stolen, white eye, worms;

e Blindness, bogged, cancer, cold, fire, missing, poison, rain, shearing;

f Various;

g Accident, blindness, bogged, cramped, destroyed, dogs, excessive salt, fire, foot rot, fuchsia, grass-seed, hawks, inflammation, lockjaw, lost, maimed, natural, poison-weed, staggers, worms;

h Blight, bogged bushfire, cancer, cold, crows, droving, eagles, excessive drinking, fox, general, grass-seed, hanging, lost, missing, mosquitoes natural, pigs, poison-weed, stolen, various, worms;

i Accident, blindness, blood poison, cancer, cold, drowned, excessive rain, eagles, fire, general, grass-seed, hawks, killed, lost, marking, missing, natural, poison-weed, various, worms;

j Blight, blown, cold, dogs, horned, poison-weed, snakes, spear grass, tick, worms;

k Poison-weed, stolen, worms;

l Accident, poison, tick, worms;

m Grass-seed, hawks, lost, natural, poison, worms;

n Accident, cripp.ed, droving, foxes frost, general, lost, natural, ophthalmia, poison, shearing, stolen, worms;

o Dogs, drenching, lost, poison, tick, worms.

Table No. XIa.

RETURN SHOWING THE RESULTS OF LAMBING, LOSSES, KILLED FOR FOOD ON HOLDINGS, &C., IN THE SEVERAL PASTORAL DISTRICTS OF THE STATE FOR THE YEAR 1918.

Pastoral District.	Total Sheep as per Stock Returns on 1st Jan., 1918.	Ewes Mated with Rams.	Lambs Dropped.	Percentage of Lambing	Purchases.	Sales.	Losses and the Causes as Returned by Owners, and the Percentage to Total Losses from Each Cause.					
							Drought.		Flood.		Fly.	
							No.	%	No.	%	No.	%
Burke	2,139,014	836,538	385,144	46·04	358,260	448,724	185,278	48·36	30,089	7·85	38,602	10·08
Burnett	9,496	2,254	1,398	62·02	3,212	4,355	59	10·03	..	..	13	2·22
Cook	216	..	..	..	156	143	..	..	..	..	..	..
Darling Downs ..	1,339,242	466,477	192,911	41·35	330,265	387,498	118,522	57·11	1,982	0·96	20,835	10·04
Gregory North ..	1,881,498	830,197	353,267	42·55	230,283	249,134	182,173	48·19	18,107	4·79	37,987	10·05
Gregory South ..	334,488	157,284	90,610	57·61	53,210	35,128	8,709	22·35	650	1·67	4,748	12·19
Leichhardt ..	719,774	315,037	180,652	57·34	180,627	107,071	13,244	12·10	16,589	15·16	32,096	29·33
Maranoa	1,688,908	792,773	479,610	60·50	736,432	683,667	44,410	29·45	170	0·11	27,607	18·31
Mitchell	6,642,483	3,011,700	1,555,402	51·65	766,818	1,234,952	172,123	22·09	63,406	8·14	121,322	15·56
Moreton	13,397	3,946	1,862	47·19	2,218	3,903	756	38·63	..	..	37	1·89
North Kennedy ..	5,351	1,654	857	51·81	3,737	3,689	20	1·28	400	25·53	557	35·55
Port Curtis ..	12,870	4,914	2,489	50·65	3,573	655	909	26·50	590	17·20	180	5·25
South Kennedy ..	205,616	71,809	51,171	71·26	45,151	38,722	4,633	12·06	8,492	22·10	12,281	31·97
Warrego	2,207,173	1,091,720	742,556	68·02	372,646	385,887	39,328	21·05	890	0·48	27,903	14·94
Wide Bay	4,742	1,114	751	67·41	316	1,103	68	12·43	..	..	1	0·18
	17,204,268	7,587,417	4,038,680	53·23	3,086,904	3,584,631	770,232	33·78	141,365	6·20	324,169	14·21

Pastoral District.	Losses and the Causes as Returned by Owners, and the Percentage to Total Losses from Each Cause.								Killed for Food on Holding.	Total Sheep as per Stock Returns on 31st Dec., 1918.	Skins Obtained during Year.
	Dingoes.		Old Age and Lambing.		Other. *		Total Losses and Percentage to Total Sheep.				
	No.	%	No.	%		No.	%	No.	%			
Burke	6,134	1·60	67,420	17·60	*a*	55,595	14·51	383,118	17·91	20,886	2,029,690	21,171
Burnett	122	20·75	208	35·37	*b*	186	31·63	588	6·19	364	8,799	312
Cook	..	..	..	..	..	..	..	..	..	..	229	..
Darling Downs ..	16,245	7·83	27,843	13·42	*c*	22,094	10·65	207,521	15·50	31,335	1,236,064	46,224
Gregory North ..	18,938	5·01	65,842	17·42	*d*	54,981	14·54	378,028	20·09	21,358	1,816,528	21,365
Gregory South ..	8,327	21·37	15,750	40·43	*e*	775	1·99	38,959	11·65	8,306	395,915	3,157
Leichhardt ..	13,381	12·23	16,794	15·35	*f*	17,327	15·83	109,431	15·20	10,826	853,725	8,736
Maranoa	20,606	13·66	46,317	30·71	*g*	11,700	7·76	150,810	8·93	32,051	2,038,422	29,367
Mitchell	73,003	9·37	155,657	19·98	*h*	193,707	24·86	779,218	11·73	76,433	6,874,100	71,132
Moreton	408	20·84	378	19·32	*i*	378	19·32	1,957	14·61	700	10,917	868
North Kennedy ..	128	8·17	372	23·73	*j*	90	5·74	1,567	29·28	160	4,529	153
Port Curtis	136	3·96	419	12·22	*k*	1,196	34·87	3,430	26·65	327	14,520	389
South Kennedy ..	3,370	8·77	7,609	19·81	*l*	2,033	5·29	38,418	18·68	3,430	221,368	3,434
Warrego	39,369	21·08	65,029	34·81	*m*	14,268	7·64	186,787	8·46	37,575	2,712,126	36,623
Wide Bay	101	18·46	240	43·88	*n*	137	25·05	547	11·54	106	4,053	127
	200,268	8·78	469,878	20·61		374,467	16·42	2,280,379	13·25	243,857	18,220,985	243,053

* Causes included in "Other"—

a Bogged, bushfire, cancer, foxes, killed for bait, lost, marking, natural, poison, shearing;

b Marking, poison, worms;

c Blown, bogged, cancer, crows, dogs, eaglehawks, foxes, frost, grubs in head, hoven, lost, natural, pneumonia, poison, white eye, worms;

d Bushfire, cancer, killed for bait, marking, natural, poison, shearing, wild pigs.

e Foxes, poison weed, stolen;

f Bogged, bushfire, dogs, grass seed, lost, poison, prickly-pear, staggers, worms.

g Blight, bogged, cancer, crows, fire, foxes, marking, missing, natural, poison, shearing, travelling, wild pigs, worms;

h Blindness, bogged, bushfire, cancer, droving, eaglehawks, footrot, foxes, killed for skins, marking, natural, shearing, worms;

i Blown, eaglehawks, poison, scrubticks, worms;

j Lantana, ticks;

k Cyclone, speargrass, ticks, worms;

l Lost, worms;

m Blindness, bogged, bushfire, cancer, dogs, foxes, hawks, marking, poison weed, shearing, travelling.

n Dogs, ticks, worms.

REPORT OF THE GOVERNMENT STATISTICIAN ON AGRICULTURAL PRODUCTION FOR THE YEAR 1918.

DAIRYING.

B.

TABLE SHOWING THE PROGRESS OF THE DAIRYING INDUSTRY SINCE THE YEAR 1909.

Year.	Dairying Establishments, Exclusive of Factories.	Dairy Cows. In Milk.	Dairy Cows. Dry.	Dairy Cows. Total.	—	Production of Butter.	Production of Cheese.
						Lb.	Lb.
					1890	*2,000,000	*170,240
					1895	3,719,523	1,841,799
					1900	8,680,389	1,984,705
1909 ...	15,279	228,497	105,342	333,839	1905	20,319,976	2,682,089
1910 ...	16,079	262,788	102,656	365,444	1910	31,258,333	4,146,661
1911 ...	16,225	237,997	119,098	357,095	1911	27,858,535	3,718,257
1912 ...	16,579	267,847	107,813	375,660	1912	30,307,339	3,947,615
1913 ...	17,866	285,403	106,036	391,439	1913	35,199,387	5,395,050
1914 ...	18,029	288,334	98,977	387,311	1914	37,230,240	7,931,869
1915 ..	17,876	218,511	116,732	335,243	1915	25,456,714	4,383,410
1916 ...	18,410	247,855	95,456	343,311	1916	28,967,279	8,495,825
191 ...	19,404	303,133	96,375	399,508	1917	38,930,690	11,142,114
1918 ...	19,313	255,039	126,466	381,505	1918	32,371,575	8,636,700

* Estimated.

B a.

DETAILS OF THE PRINCIPAL DAIRYING DIVISIONS FOR THE YEAR 1918.

District.	Total Milk Obtained.	How Utilised. For Butter on Farms.	For Cheese on Farms.	For Domestic Purposes by Producer.	Separated for Sale.	Sold for Consumption as Milk.	Sold to Condensed Milk Factories.	Sold to Cheese Factories.
	Gallons.	Gallons.	Gallons.	Gallons.	Gallons.	Gallons.	Gallons.	Gallons.
Moreton	36,372,141	1,392,692	145	1,872,150	28,807,338	2,801,431	1,125,377	373,008
Wide Bay	21,855,473	1,074,328	20,000	1,159,567	18,678,846	348,999	...	573,733
Port Curtis	3,146,544	270,104	...	200,745	2,397,310	278,385	...	...
Downs	20,272,220	987,513	60	1,253,789	10,112,108	309,516	96,998	7,512,236
Other Districts	5,933,720	571,841	43,290	729,205	4,210,070	356,081	...	23,233
Total, 1918	87,580,098	4,296,478	63,495	5,215,456	*b* 64,205,672	4,094,412	1,222,375	8,482,210
Total, 1917	105,384,029	5,229,742	199,995	5,510,956	*a* 77,570,946	3,899,863	2,892,670	10,079,854
Increase, 1918	...	...	...	...	...	194,546	...	...
Decrease, 1918	17,503,931	933,264	136,500	295,500	13,365,274	...	1,670,295	1,597,644

District.	Establishments. Dairying.	Establishments. Butter Factories.	Establishments. Cheese Factories.	Dairy Cattle. In Milk.	Dairy Cattle. Dry.	Butter Made. At Factories.	Butter Made. By Farmers.	Butter Made. Total.	Cheese Made. At Factories.	Cheese Made. By Farmers.	Cheese Made. Total.
	No.	No.	No.	No.	No.	Lb.	Lb.	Lb.	Lb.	Lb.	Lb.
Moreton ...	7,320	18	7	110,520	44,782	13,750,513	593,629	14,344,142	150,102	100	150,202
Wide Bay ...	4,289	11	8	68,648	33,014	8,528,529	413,640	8,942,169	1,006,339	20,000	1,026,339
Port Curtis ...	773	3	...	11,590	9,425	1,111,087	94,753	1,205,840	...	..	...
Downs	4,743	11	62	47,365	24,678	5,677,623	397,607	6,075,230	7,396,211	40	7,396,251
Other Districts...	2,188	2	2	16,716	14,567	1,601,360	202,834	1,804,194	20,618	43,290	63,908
Total, 1918 ...	19,313	45	79	255,039	126,466	30,669,112	1,702,463	32,371,575	8,573,270	63,430	8,636,700
Total, 1917 ...	19,404	47	83	303,133	96,375	36,854,031	2,076,659	38,930,690	10,973,576	168,538	11,142,114
Increase, 1918	...	...	...	...	30,091	...	...	...	...	...	...
Decrease, 1918	91	2	4	48,094	...	6,184,919	374,196	6,559,115	2,400,306	105,108	2,505,414

a 1,313,483 gallons of this were sent from the Moreton Division to New South Wales.
b 1,065,961 gallons of this were sent from the Moreton Division to New South Wales.

B b.

BUTTER.

QUANTITY EXPORTED FOR FIVE YEARS.

Butter Exported Overseas.	1914. Six Months.	1914-15.	1915-16.	1916-17.	1917-18.
Quantity (lb.)	9,570,140	14,134,135	2,353,989	17,945,023	19,595,849
Value	£427,742	£697,437	£136,232	£1,285,169	1,320,992
Average value per lb.	10¾d.	12d.	1s. 2½d.	1s. 5¼d.	1s. 4⅓d.

NOTE.—Butter sent to other States not included in above.

B c.

CONDENSED MILK MANUFACTURED.

	Lb.
1912	7,923,381
1913	8,059,051
1914	6,967,486
1915	5,368,510
1916	6,584,272
1917	9,409,059
1918	6,845,610

POULTRY.

B d.

DETAILS RESPECTING PRINCIPAL DISTRICTS, 1918.

Petty Sessions District.	Fowls.	Ducks.	Geese.	Turkeys.	Other.	Eggs.
	No.	No.	No.	No.	No.	Doz.
Allora	10,702	176	...	42	...	23,910
Beaudesert	14,669	901	123	606	82	27,640
Brisbane (A)	36,072	2,527	43	78	8	179,381
Brisbane (B)	17,862	3,409	59	49	2	62,373
Bundaberg	16,839	121	101	150	11	55,968
Cairns	15,265	1,004	82	112	22	49,910
Clifton	20,586	296	3	348	37	88,650
Crow's Nest	10,491	326	76	76	...	32,948
Dalby	21,362	751	128	1,182	10	59,310
Dugandan	34,881	2,130	413	316	73	150,636
Esk	15,277	989	541	572	158	65,111
Gatton	26,441	1,720	824	320	20	73,143
Gayndah	10,270	254	35	207	...	30,545
Gladstone	9,596	248	58	152	32	42,980
Gympie	23,201	1,918	96	376	80	80,378
Harrisville	23,710	1,225	180	426	44	94,504
Helidon	9,085	160	58	2	...	38,083
Herberton	20,558	842	50	256	4	55,424
Highfields	8,566	237	23	90	6	46,766
Ipswich	8,627	296	35	67	136	28,629
Jondaryan	7,746	158	15	226	...	26,397
Killarney	7,121	172	9	81	10	17,292
Laidley	19,115	2,150	697	143	63	63,237
Logan	14,763	1,424	180	26	...	49,349
Lowood	14,980	1,617	900	133	25	52,435
Mackay	28,320	1,187	110	143	53	90,657
Maroochy	27,322	1,252	82	171	23	119,818
Maryborough	11,901	599	43	104	2	43,701
Nanango	26,802	960	92	620	83	43,254
Nerang	9,857	831	59	179	3	30,594
Oakey	19,317	336	65	362	9	49,907
Pittsworth	18,698	125	34	219	...	75,873
Redcliffe	11,755	822	25	75	24	42,014
Rockhampton	23,356	989	120	238	108	96,003
Rosewood	18,184	672	145	140	24	71,118
Toowoomba	19,147	408	64	157	...	58,870
Townshend	12,036	1,285	202	12	30	39,341
Warwick	28,001	865	77	764	31	86,575
Wienholt	25,290	1,174	245	728	63	71,155
All other Districts	161,721	7,432	671	4,200	747	511,715
Totals, 1918	859,492	43,988	6,763	14,148	2,023	2,925,594
Totals, 1917	939,602	53,916	7,240	21,041	2,349	3,143,770
Increase, 1918	...	...	...	...	...	...
Decrease, 1918	80,110	9,928	477	6,893	326	218,176

N.B.—Brisbane (B) refers to South Brisbane.

APIARIES.

B e.

PARTICULARS FOR 1918.

Petty Sessions District.	No. of Hives.		Honey.	Average per Productive Hive.	Wax.	Petty Sessions District.	No. of Hives.		Honey.	Average per Productive Hive.	Wax.
	Productive.	Non-Productive.					Productive.	Non-Productive.			
			Lb.	Lb.	Lb.				Lb.	Lb.	Lb.
Allora	14	52	400	29	15	Lowood	11	43	203	19	...
Brisbane (A)	225	431	9,025	40	129	Maroochy	785	243	29,717	38	498
Brisbane (B)	117	77	6,768	58	152	Maryborough	393	199	11,866	30	245
Bundaberg	124	114	5,885	47	180	Nerang	199	91	5,741	29	53
Caboolture	960	218	22,070	23	422	Oakey	56	8	3,020	54	10
Clermont	60	...	300	5	100	Pittsworth	345	124	18,754	54	252
Clifton	80	35	6,000	75	45	Redcliffe	228	65	5,106	22	192
Cook	187	4	2,796	15	165	Rockhampton	653	197	23,299	36	293
Dalby	254	124	7,882	31	608	Roma	213	123	17,480	82	748
Dugandan	36	156	419	12	...	Rosewood	6	102	100	17	...
Esk	97	30	2,711	28	77	Southport	185	48	7,369	40	105
Gatton	111	69	2,966	27	15	Stanthorpe	392	106	12,854	33	443
Goodna	73	60	2,632	36	160	Tiaro	65	116	926	14	45
Gympie	744	527	33,188	45	485	Toowoomba	88	166	3,872	44	27
Harrisville	24	47	375	16	...	Warwick	508	270	58,578	115	1,141
Helidon	32	78	760	24	...	All other Districts	1,054	794	49,323	47	784
Herberton	74	12	2,080	28	129	Totals, 1918	10,061	5,223	410,182	41	9,099
Ipswich	46	60	1,665	36	...	Totals, 1917	13,487	5,235	771,015	57	11,519
Killarney	865	238	28,880	33	693	Increase, 1918	...	...	...	...	...
Laidley	64	59	2,032	32	20	Decrease, 1918	3,426	12	360,833	16	2,420
Logan	693	137	23,140	33	868						

N.B.—Brisbane (B) refers to South Brisbane.

C.

Return showing Progress of Holdings and Area Cultivated.—Return for 10 Years.

Year.	Number of Holdings Returned.	Increase per cent. on Previous Year.	Increase per cent. on Figures of 1904.	Area under Cultivation.	Increase per cent. on Previous Year.	Increase per cent. on Figures for 1904.
1909 ...	21,144	6·3	18·4	738,447	13·52	27·78
1910 ...	22,023	4·1	23·4	794,826	7·63	37·54
1911 ...	22,276	1·1	24·8	779,800	— 1·89	34·94
1912 ...	22,976	3·1	28·7	844,420	8·29	46·12
1913 ...	23,472	2·2	31·5	920,010	8·95	59·20
1914 ...	24,553	4·6	37·5	981,218	6·65	69·79
1915 ...	24,828	1·11	39·06	1,059,401	7·97	83·32
1916 ...	25,713	3·56	44·02	1,077,342	1·69	86·42
1917 ...	25,872	0·62	44·91	998,036	— 7·36	72·70
1918 ...	26,041	0·65	45·86	982,066	— 1·60	69·94

The minus sign (—) implies a decrease.

C a.

Return showing Labour Employed and the Capital Invested in Farming Machinery, Etc.

Petty Sessions District.	Labour.				Value of Machinery and Implements.				
	Farming.		Dairying.		Farming.	Dairying.	Irrigation.	Travelling Machinery.	Total.
	Males.	Females.	Males.	Females.	£	£	£	£	£
Allora	222	5	52	48	38,603	3,565	200	3,020	45,388
Ayr	1,129	5	5	5	61,793	180	142,690	...	204,663
Beaudesert	349	5	208	410	17,281	13,375	110	...	30,766
Biggenden	107	1	342	232	7,712	14,287	...	...	21,999
Brisbane (A)	758	39	323	222	17,209	5,759	2,237	1,965	27,170
Brisbane (B)	237	15	193	108	6,753	3,077	975	...	10,805
Bundaberg	1,519	11	96	144	57,903	3,802	18,337	6,700	86,742
Cairns	1,152	26	14	12	40,986	338	100	20	41,444
Childers	776	9	83	73	24,543	1,149	25	...	25,717
Clifton	713	2	100	328	85,305	8,301	660	3,900	98,166
Crow's Nest	397	2	147	287	16,862	5,041	...	640	22,543
Dalby	532	9	731	433	46,338	17,321	50	470	64,179
Dugandan	716	12	502	530	37,575	7,728	380	280	45,963
Esk	453	22	416	247	28,365	5,280	1,746	1,280	36,671
Gatton	758	46	465	422	31,381	7,077	...	...	38,458
Gayndah	322	3	424	381	15,324	10,737	506	...	26,561
Goombungee	152	...	9	112	13,464	2,396	...	1,80	17,660
Gympie	428	1	1,272	979	16,507	35,619	230	100	52,456
Harrisville	538	94	334	189	27,943	5,970	1,328	155	35,396
Helidon	278	3	124	217	13,988	3,935	512	590	19,025
Herberton	631	15	489	366	16,066	22,555	1,044	255	39,920
Ingham	856	5	13	14	52,293	336	...	...	52,629
Ipswich	241	1	237	163	6,182	2,879	1,055	120	10,236
Jondaryan	141	...	72	50	15,440	4,470	410	460	20,780
Killarney	300	4	89	145	27,970	3,134	1,085	3,641	35,830
Laidley	490	7	169	314	42,488	6,027	40	500	49,055
Logan	613	123	272	299	16,428	4,759	...	127	21,314
Lowood	380	56	191	239	21,155	3,582	...	...	24,737
Mackay	2,436	212	30	32	117,330	1,760	485	250	119,825
Maroochy	945	153	663	487	15,380	18,975	15	...	34,370
Maryborough	596	13	95	177	17,249	3,506	55	...	20,810
Nanango	426	12	257	208	61,001	15,135	...	95	76,231
Nerang	262	2	493	371	8,072	17,783	185	530	26,570
Oakey	600	5	423	385	44,017	8,945	20	2,040	55,022
Pittsworth	727	49	453	414	77,373	11,919	117	1,515	90,924
Redcliffe	411	1	288	257	11,141	6,243	1,140	...	18,524
Rockhampton	651	41	393	272	28,263	10,178	11,202	1,037	50,680
Roma	308	15	128	146	23,903	3,782	1,027	...	28,712
Rosewood	396	2	387	337	15,815	4,830	..	...	20,645
Tiaro	308	4	248	182	11,856	4,510	30	...	16,396
Toowoomba	691	103	384	298	31,976	5,040	4,444	2,390	43,850
Townshend	282	7	252	243	11,536	2,780	...	130	14,446
Warwick	1,057	5	356	384	83,011	6,408	...	9,064	98,483
Wienholt	844	10	694	531	64,805	24,735	50	3,325	92,915
All other Districts	5,204	205	1,430	1,389	205,120	43,553	30,066	7,558	286,297
Total, 1918	31,332	1,360	14,346	13,082	1,631,705	392,761	222,550	53,957	2,300,973
Total, 1917	33,391	1,565	15,434	15,989	1,575,145	377,343	228,987	53,054	2,234,529
Increase, 1918	...	...	...	...	56,560	15,418	...	903	66,444
Decrease, 1918	2,059	205	1,088	2,907	...	...	6,437	...	...

N.B.—Brisbane (B) refers to South Brisbane.

C b.

Summary of Land Treated for Cultivation, Etc., 1918.

—	1917.	1918.
	Acres.	Acres.
Under crop	727,958	525,517
In fallow	86,801	279,809
New ground broken up	7,858	8,951
Previously cropped, but not during 1917 and 1918 respectively	175,419	167,789
Under cultivation	998,036*	982,066*
Under permanent artificially sown grasses	406,094	418,467
Grand total	1,404,130	1,400,533

* See C c. for details of areas and owners.

C c.

Land Selected Destined to become Freehold.—Return for 10 Years

Year.	Acres.	Year.	Acres.
1909	1,278,436	1914	1,140,492
1910	1,969,819	1915	789,572
1911	1,756,347	1916	305,500
1912	1,261,712	1917	Nil
1913	1,086,825	1918	Nil

C d.

Value of Agricultural Crops.

—	1917.	1918.	Increase or—Decrease.
	£	£	£
Grain crops	872,487	1,052,392	179,905
Green forage	439,545	543,810	104,265
Hay and straw	579,486	531,486	— 48,000
Root crops	236,184	150,400	— 85,784
Sugar-cane	4,334,563	2,733,268	— 1,601,295
Fruit	528,931	681,266	152,335
All other	316,919	318,898	1,979
Total	7,308,115	6,011,520	— 1,296,595

The minus sign (—) indicates a decrease.

C e.

Area under Cultivation.

Petty Sessions District.	Under 5 Acres.		5 and under 20 Acres.		20 and under 50 Acres.		50 Acres and Over.		Totals.	
	Owners.	Acres.	Owners.	Acres.	Owners.	Acres.	Owners.	Acres.	Owners.	Acres.
Allora	1	1	5	73	18	652	229	36,041	253	36,767
Ayr	3	3	50	724	149	5,145	224	23,988	426	29,860
Beaudesert	45	121	185	2,030	107	3,229	13	884	350	6,264
Biggenden	17	49	86	899	32	877	3	180	138	2,005
Brisbane (A)	183	493	355	3,636	68	1,834	1	55	607	6,018
Brisbane (B)	71	150	74	821	26	831	...	...	171	1,802
Bundaberg	53	149	195	2,281	255	7,936	100	16,195	603	26,561
Cairns	30	57	102	1,210	124	4,188	177	18,634	433	24,089
Childers	19	43	52	576	85	2,774	102	10,885	258	14,278
Clifton	...	...	12	64	36	1,344	453	80,865	501	82,273
Crow's Nest	11	27	102	1,233	164	5,151	45	3,210	322	9,621
Dalby	40	75	105	1,139	154	4,706	221	26,580	520	32,500
Douglas	15	42	21	257	35	1,134	46	4,732	117	6,165
Dugandan	7	25	105	1,349	131	10,216	92	6,120	335	17,710
Esk	26	75	130	1,430	135	4,024	60	5,014	351	10,543
Gatton	16	42	119	1,520	234	7,430	189	15,662	558	24,654
Gayndah	26	61	111	1,237	61	1,667	16	1,430	214	4,395
Gin Gin	21	52	43	510	111	3,679	51	3,964	226	8,205
Goombungee	...	...	8	98	52	1,758	77	6,985	137	8,841
Gympie	202	501	245	2,392	60	1,636	8	578	515	5,107
Harrisville	11	32	86	1,120	188	6,219	78	5,389	363	12,760
Helidon	14	38	85	989	113	3,237	32	1,982	244	6,246
Herberton	144	149	55	603	153	4,884	144	10,839	496	16,475
Highfields	1	4	49	566	121	3,662	66	3,947	237	8,179
Ingham	33	33	31	342	59	2,116	197	20,408	320	22,899
Inglewood	16	50	29	316	42	1,332	42	4,759	129	6,457
Ipswich	23	55	80	928	62	1,898	15	976	180	3,857
Jondaryan	2	8	28	326	85	2,676	102	12,346	217	15,356
Killarney	8	23	19	198	27	864	150	21,175	204	22,260
Laidley	17	37	51	703	222	7,703	190	13,791	480	22,234
Logan	77	210	318	3,328	27	751	...	...	422	4,289
Lowood	4	10	39	510	177	5,986	62	4,124	282	10,630
Mackay	52	126	225	2,659	454	15,594	419	35,822	1,150	54,201
Maroochy	367	895	503	4,769	60	1,705	1	55	931	7,424
Maryborough	103	254	233	2,548	108	3,046	10	845	454	6,693
Mourilyan	8	26	67	812	158	5,298	169	14,169	402	20,305
Nanango	32	52	155	1,879	287	9,248	239	19,739	713	30,918
Oakey	1	1	19	238	89	3,058	328	39,852	437	43,149
Pittsworth	4	6	36	425	89	3,184	415	62,361	544	65,976
Proserpine	19	49	126	1,483	90	2,916	38	2,937	273	7,385
Rockhampton	172	384	199	2,007	117	3,713	38	2,907	526	9,011
Roma	15	33	25	262	62	1,972	179	21,811	281	24,078
Rosewood	1	1	92	1,295	204	6,517	21	1,319	318	9,132
Stanthorpe	30	81	193	2,421	118	3,626	9	559	350	6,687
Tiaro	65	158	134	1,478	75	2,169	13	1,001	287	4,806
Toowoomba	126	338	196	1,953	119	3,691	156	23,648	597	29,630
Townshend	6	12	47	616	119	3,828	25	1,494	197	5,950
Warwick	19	52	79	903	120	3,757	479	65,195	697	69,907
Wienholt	24	50	109	1,315	234	7,642	258	21,389	625	30,396
All other Districts ...	821	1,972	1,273	13,224	426	11,967	187	19,955	2,707	47,118
Total, 1918	3,001	7,105	6,686	73,695	6,242	204,470	6,169	696,796	22,098	982,066
Total, 1917 ...	3,033	7,319	7,210	80,463	6,787	217,530	6,023	692,724	23,053	998,036
Increase, 1918 ...	...	...	...	...	...	...	146	4,072	...	...
Decrease, 1918 ...	32	214	524	6,768	535	13,060	...	...	955	15,970

N.B.—Brisbane (B) refers to South Brisbane.

See Summary C b.

D.

Irrigation.—Return for 10 Years.

Year.	Acres Irrigated.	Year.	Acres Irrigated.
1909	8,470	1914	11,809
1910	8,007	1915	11,842
1911	8,661	1916	10,886
1912	9,420	1917	4,467
1913	11,904	1918	6,947

D a.

IRRIGATION.

Petty Sessions District.	Number of Irrigators.	Acres Irrigated.	Original Source of Water Supply.	Means Employed for Procurement and Utilisation.	Principal Crops Treated.
Ayr	133	4,078	Wells, lagoons, river ...	Steam, oil, and suction gas pumps, electricity, and gravitation	Sugar-cane
Bowen	73	442	Wells, creek, and river ...	Steam, oil, and horse pumps, windmills, drains, and pipes	Fruit, vegetables, and sugar
Brisbane (A)	38	163	Creeks, wells, and springs...	Oil and horse pumps, windmills, sprays, and gravitation	Market gardens, imphee
Brisbane (B)	9	31	Creeks, wells, and bores ...	Oil and steam pumps, pipes	Fruit and vegetables
Bundaberg	4	73	Wells, Burnett River ...	Oil and steam engines, windmills, and gravitation	Market gardens, fruit, and sugar-cane
Cape River	7	41	Creeks and river	Oil, steam, and horse pumps, trenches, and pipes	Fruit and vegetables
Charters Towers ...	22	63	Wells and river	Oil and horse pumps, windmills, and pipes	Fruit, vegetables, and green fodder
Cloncurry	5	25	Wells and creek	Oil and steam pumps, drains	Fruit and vegetables
Cunnamulla	6	399	River and bores	Steam pumps, windmills, and gravitation	Natural grasses, oaten hay, fruit, and vegetables
Harrisville	5	78	Creek	Oil and steam engines, suction gas and sprays	Lucerne and wheat
Herberton	7	25	Wells and creek	Oil engine, pumps, drains and windmills	Fruit and vegetables
Hughenden	2	60	Wells	Oil engine	Fruit and vegetables
Inglewood	6	26	River and creek	Steam and oil engines, drains and pipes	Tobacco and vegetables
Killarney	9	75	River	Oil engines, pumps, and gravitation ...	Vegetables
Redcliffe	6	41	Wells, creek, and river ...	Oil engines, pumps, and pipes	Fruit, vegetables, lucerne, oats, and maize
Rockhampton ...	55	329	Wells, river, and lagoons ...	Steam and oil engines, suction gas, sprays, and gravitation	Fruit, vegetables, lucerne, and Japanese millet
Roma	1	50	Wells	Oil engine	Fruit
St. George	7	30	River and wells	Steam and oil pumps, drains and windmills	Fruit and vegetables, lucerne
Toowoomba	40	93	Wells and bores	Oil pumps, windmills, and pipes ..	Fruit, vegetables, and lucerne
Townsville	36	373	Wells, creeks, and rivers ...	Oil, steam, suction gas, horse pumps, gravitation	Fruit and vegetables, maize and sorghum
52 Other Districts ...	120	452	Various	...	Mostly market gardens
Total 1918 ...	591	6,947			

E.

WHEAT (GRAIN).

RETURN FOR TEN YEARS.

Year.	Area.	Produce.	Average per Acre.	INCREASE OR — DECREASE ON THE PREVIOUS YEAR.		
				Area.	Produce.	Average per Acre.
	Acres.	Bushels.	Bushels.	Acres.	Bushels.	Bushels.
1909	117,160	1,571,589	13·41	36,262	368,790	– 1·46
1910	106,718	1,022,373	9·58	– 10,442	– 549,206	– 3·83
1911	42,962	285,109	6·64	– 63,756	– 737,264	– 2·94
1912	124,963	1,975,505	15·81	82,001	1,690,396	9·17
1913	132,655	1,769,432	13·34	7,692	206,073	– 2·47
1914	127,015	1,585,087	12·48	– 5,640	– 184,345	– 0·86
1915	93,703	414,438	4·42	– 33,312	– 1,170,649	– 8·06
1916	227,778	2,463,141	10·81	134,075	2,048,703	6·39
1917	127,815	1,035,268	8·10	– 99,963	– 1,427,873	– 2·71
1918	21,637	104,509	4·83	– 106,178	– 930,759	– 3·27
Average of Ten Years	112,241	1,222,644	9·94	...	...	...

E a.

WHEAT.

AVERAGE YIELD PER ACRE EACH STATE.—RETURN FOR 10 YEARS.

States.	Average Produce per Acre—Bushels.										
	1909.	1910.	1911.	1912.	1913.	1914.	1915.	1916.	1917.	1918.	Mean for 10 Year ending 1918
Queensland	13·4	9·6	6·6	15·81	13·34	12·48	4·42	10·81	8·10	4·83	9·94
New South Wales	14·3	13·1	10·6	14·56	11·86	4·65	15·94	9·61	11·71	7·40	11·37
Victoria	13·7	14·5	9·7	12·58	12·84	1·38	15·90	16·37	14·03	11·40	12·24
South Australia	13·3	11·6	9·1	10·34	7·47	1·41	12·46	16·46	12·18	9·98	10·43
Western Australia	12·5	10·1	7·1	11·56	12·15	1·91	10·52	10·28	7·44	9·30	9·29
Tasmania	21·4	21·5	18·8	24·99	18·97	16·10	20·43	12·53	11·57	18·81	18·51

E b.

WHEAT FOR GRAIN.—RETURN FOR TWO YEARS.

Divisions and Petty Sessions Districts.	1917. Area.	1917. Produce.	1917. Average per Acre.	1918. Area.	1918. Produce.	1918. Average per Acre.	INCREASE OR – DECREASE. Area.	Produce.	Average per Acre.
MORETON.	Acres.	Bushels.	Bushels.	Acres.	Bushels.	Bushels.	Acres.	Bushels.	Bushels.
Cooyar	88	660	7·50	...	...	...	– 88	– 660	– 7·50
Crow's Nest	308	4,222	13·71	41	510	12·44	– 267	– 3,712	– 1·27
Dugandan	...	...	...	...	...	...	...	...	...
Esk	...	...	...	...	...	...	...	...	...
Gatton	13	144	11·08	13	148	11·38	...	4	0·30
Harrisville	...	...	...	...	...	...	...	...	...
Helidon	4	80	20·00	...	...	...	– 4	– 80	– 20·00
Laidley	...	...	...	...	...	...	...	...	...
Townshend	...	...	...	...	...	...	...	...	...
Woodford	3	15	5·00	...	...	...	– 3	– 15	– 5·00
Total, Moreton	416	5,121	12·31	54	658	12·19	– 362	– 4,463	– 0·12
WIDE BAY.									
Biggenden	...	...	...	...	...	...	...	...	...
Gayndah	9	15	1·67	...	...	...	– 9	– 15	– 1·67
Nanango	1,418	12,163	8·58	310	1,745	5·63	– 1,108	– 10,418	– 2·95
Wienholt	328	1,438	4·38	10	210	21·00	– 318	– 1,228	16·62
Total, Wide Bay	1,755	13,616	7·76	320	1,955	6·11	– 1,435	– 11,661	– 1·65
SOUTH-WESTERN.									
St. George	235	394	1·68	...	...	...	– 235	– 394	– 1·68
Total South-western	235	394	1·68	...	...	...	– 235	– 394	– 1·68
CENTRAL.									
Emerald	56	312	5·57	104	252	2·42	48	– 60	– 3·15
Springsure	89	948	10·65	...	...		– 89	– 948	– 10·65
Taroom	...	...	...	2	24	12·00	2	24	12·00
Total Central	145	1,260	8·69	106	276	2·60	– 39	– 984	– 6·09
MARANOA.									
Mitchell	1,877	10,040	5·35	523	2,340	4·47	– 1,354	– 7,700	– 0·88
Roma	11,918	69,518	5·83	6,857	29,562	4·31	– 5,061	– 39,956	– 1·52
Yeulba	146	624	4·27	...	...	...	– 146	– 624	– 4·27
Total, Maranoa	13,941	80,182	5·75	7,380	31,902	4·32	– 6,561	– 48,280	– 1·43
DOWNS.									
Allora	13,642	103,339	7·58	2,210	13,379	6·05	– 11,432	– 89,960	– 1·53
Clifton	17,093	141,357	8·27	1,276	6,215	4·87	– 15,817	– 135,142	– 3·40
Condamine	2,095	15,074	7·20	20	60	3·00	– 2,075	– 15,014	– 4·20
Dalby	11,074	74,471	6·72	601	1,303	2·17	– 10,473	– 73,168	– 4·55
Goombungee	1,349	21,234	15·74	...	...		– 1,349	– 21,234	– 15·74
Goondiwindi	4,982	29,783	5·98	197	870	4·42	– 4,785	– 28,913	– 1·56
Highfields	550	8,274	15·04	9	52	5·78	– 541	– 8,222	– 9·26
Inglewood	3,294	39,445	11·97	616	1,410	2·29	– 2,678	– 38,035	– 9·68
Jondaryan	2,841	19,654	6·92	116	465	4·01	– 2,725	– 19,189	– 2·91
Killarney	9,207	103,968	11·29	1,934	5,939	3·07	– 7,273	– 98,629	– 8·22
Oakey	6,602	57,789	8·75	143	509	3·56	– 6,459	– 57,280	– 5·19
Pittsworth	19,263	112,065	5·82	493	1,772	3·59	– 18,770	– 110,293	– 2·23
Stanthorpe	...	...	...	...	...	...	...	...	...
Texas	102	1,032	10·12	30	24	0·80	– 72	– 1,008	– 9·32
Toowoomba	2,942	24,787	8·43	305	1,183	3·88	– 2,637	– 23,604	– 4·55
Warwick	16,287	182,423	11·20	5,827	36,537	6·27	– 10,460	– 145,886	– 4·93
Total, Downs	111,323	934,695	8·40	13,777	69,718	5·06	– 97,546	– 864,977	– 3·34
Total State	127,815	1,035,268	8·10	21,637	104,509	4·83	–106,178	– 930,759	– 3·27

E c.

TABLE SHOWING QUANTITY OF WHEAT TREATED IN QUEENSLAND, 1918.

District.	Number of Establishments.	Number of Hands Employed.	Pairs of Stones.	Sets of Rollers.	Wheat Treated.	FLOUR MADE. Tons.	FLOUR MADE. Value.	MEAL MADE. Tons.	MEAL MADE. Value.	BRAN AND POLLARD. Bushels.	BRAN AND POLLARD. Value.
			Pairs.	Sets.	Bushels.		£		£		£
Metropolitan 1918	2	147	5	25	2,317,098	45,589	548,830	244	2,991	2,149,720	139,242
Elsewhere 1918	9	123	2	68							
Total, 1917	12	239	14	93	2,402,923	46,244	554,583	220	2,637	2,195,754	119,907

F.

BARLEY.

SHOWING HOW CROP WAS DEALT WITH.

Barley.	1917.	1918.
	Acres.	Acres.
Reaped for grain	7,702	1,316
Mown for hay	273	55
Used for green food	5,256	4,663
Totals	13,231	6,034

F a.

BARLEY.

SHOWING RESULT OF GRAIN CROP FOR TWO YEARS.

Year.	Area for Grain.	Produce.	Average Produce per Acre.
	Acres.	Bushels.	Bushels.
1917	7,702	143,574	18·64
1918	1,316	8,824	6·71
Decrease, 1918	6,386	134,750	11·93

F b.

BARLEY.

RESULT OF CROP, DISTINGUISHING BETWEEN MALTING AND OTHER VARIETIES.

Petty Sessions District.	Malting Grain.			Other Varieties Grain.		
	Acres.	Bushels.	Average per Acre, Bushels.	Acres.	Bushels.	Average per Acre, Bushels.
Allora	25	243	9·72	52	561	10·79
Clifton	507	3,944	7·78	4	60	15·00
Crow's Nest	...	...	...	5	60	12·00
Dalby	...	...	...	..	...	...
Goombungee	...	...	...	...	...	...
Highfields	...	...	...	...	...	...
Jondaryan	...	...	...	...	...	...
Killarney	15	40	2·67	59	300	5·08
Oakey	40	304	7·60	...	...	...
Pittsworth	222	1,192	5·37	...	...	...
Toowoomba	120	852	7·10	...	...	...
Warwick	143	464	3·24	108	756	7·00
All other Districts	10	30	3·00	6	18	3·00
Total, 1918	1,082	7,069	6·53	234	1,755	7·50

F c.

MALT.

QUANTITY MADE AND HOW DEALT WITH.—RETURN FOR 10 YEARS.

Year.	Made from Imported Barley.	Made from Queensland Barley.	Total Malt Made.	Beer (including Waste).	Malt used in Breweries as returned to Excise.
	Bushels.	Bushels.	Bushels.	Gallons.	Bushels.
1909	...	110,020	110,020	5,362,791	179,175
1910	...	122,811	122,811	5,736,876	190·020
1911	...	155,087	155,087	6,375,228	208,766
1912	197,160	4,735	201,895	6,809,405	224,852
1913	65,830	85,769	151,599	6,248,304	203,564
1914	46,545	73,398	119,943	6,244,462	194,031
1915	...	34,204	34,204	5,821,397	177,323
1916	47,730	...	47,730	5,586,940	161,764
1917	...	70,117	70,117	6,167,638	181,067
1918	...	58,139	58,139	6,889,707	206,992

G.

MAIZE.

SUMMARY FOR FIVE YEARS.

Year.	Grain.		Average per Acre.
	Acres.	Bushels.	Bushels.
1914	176,372	4,260,673	24·16
1915	146,474	2,003,463	13·68
1916	181,405	3,018,934	16·64
1917	165,124	4,188,586	25·37
1918	149,505	4,105,974	27·46

G a.

MAIZE (GRAIN).

PRODUCTION IN EACH DIVISION OF THE STATE.

Division or Group.	Acres.	Produce.	Average.	Proportion of Divisional Area to Total Area of Maize for Grain.
		Bushels.	Bushels.	
Moreton	47,384	1,232,057	26·00	31·70
Wide Bay	29,452	880,965	29·91	19·70
Port Curtis	2,845	50,748	17·84	1·90
Edgecumbe	183	4,039	22·07	0·12
Rockingham	13,729	414,206	30·17	9·18
York Peninsula	108	2,334	21·61	0·07
Carpentaria	62	760	12·26	0·04
Central Western	...	...	...	...
South Western	14	132	9·43	0·01
Central	92	1,610	17·50	0·06
Maranoa	305	3,328	10·91	0·21
Downs	55,331	1,515,795	27·40	37·01
Total	149,505	4,105,974	27·46	100·00

G b.

MAIZE.

AREA AND PRODUCE IN EACH PRINCIPAL DISTRICT FOR TWO YEARS.

Petty Sessions District.	Area for Grain.			Produce.			Average per Acre.		
	1917.	1918.	Increase or Decrease —	1917.	1918.	Increase or Decrease —	1917.	1918.	Increase or Decrease —
	Acres.	Acres.	Acres.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
Allora	5,683	7,706	2,023	132,020	208,786	76,766	23·23	27·09	3·86
Beaudesert	2,564	1,813	— 751	65,292	40,338	— 24,954	25·46	22·25	— 3·21
Biggenden	756	485	— 271	19,477	13,322	— 6,155	25·76	27·47	1·71
Bundaberg	1,507	712	— 795	44,783	12,631	— 32,152	29·72	17·74	— 11·98
Clifton	7,069	9,488	2,419	133,195	248,639	115,444	18·84	26·21	7·37
Crow's Nest	5,485	4,651	— 834	140,529	115,697	— 24,832	25·62	24·88	— 0·74
Dalby	1,339	943	— 396	19,837	18,395	— 1,442	14·81	19·51	4·70
Dugandan	8,848	8,474	— 374	230,683	209,563	— 21,120	26·07	24·73	— 1·34
Esk	2,641	2,077	— 564	75,061	47,536	— 27,525	28·42	22·89	— 5·53
Gatton	6,615	5,461	— 1,154	148,838	153,675	4,837	22·50	28·14	5·64
Gayndah	2,966	1,773	— 1,193	59,114	31,441	— 27,673	19·93	17·73	— 2·20
Gin Gin	903	596	— 307	22,292	12,444	— 9,848	24·69	20·88	— 3·81
Gladstone	1,646	710	— 936	45,901	15,872	— 30,029	27·89	22·35	— 5·54
Goombungee	1,785	2,117	332	44,399	55,652	11,253	24·87	26·29	1·42
Gympie	1,861	1,219	— 642	64,930	41,670	— 23,260	34·89	32·18	— 2·71
Harrisville	3,958	3,857	— 101	83,630	89,929	6,299	21·13	23·32	2·19
Helidon	1,416	803	— 613	30,978	19,297	— 11,681	21·88	24·03	2·15
Herberton	15,705	13,654	— 2,051	586,574	412,630	— 173 944	37·35	30·22	— 7·13
Highfields	2,210	2,499	289	44,670	60,386	15,716	20·21	24·16	3·95
Jondaryan	1,985	1,876	— 109	27,896	34,895	6,999	14·05	18·60	4·55
Killarney	7,877	5,764	— 2,113	187,658	175,745	— 11,913	23·82	30·49	6·67
Laidley	7,771	6,976	— 795	203,177	219,726	16,549	26·15	31·50	5·35
Logan	950	740	— 210	22,307	14,093	— 8,214	23·48	19·04	— 4·44
Lowood	4,947	4,938	— 9	117,255	137,205	19,950	23·70	27·79	4·09
Nanango	15,419	11,609	— 3,810	429,316	355,329	— 73,987	27·84	30·61	2·77
Nerang	606	418	— 188	16,096	9,975	— 6,121	26·56	23·86	— 2·70
Oakey	3,493	6,052	2,559	58,727	178,251	119,524	16·81	29·45	12·64
Pittsworth	3,336	3,798	462	73,054	84,677	11,623	21·90	22·30	0·40
Rockhampton	4,440	2,115	— 2,325	108,501	34,567	— 73,934	24·44	16·34	— 8·10
Rosewood	2,570	1,778	— 792	51,347	33,420	— 17,927	19·98	18·80	— 1·18
Toowoomba	1,976	2,491	515	28,759	57,313	28,554	14·55	23·01	8·46
Townshend	2,661	2,078	— 583	57,176	49,376	— 7,800	21·49	23·76	2·27
Warwick	8,904	12,290	3,386	206,108	387,621	181,513	23·15	31·54	8·39
Wienholt	13,229	11,931	— 1,298	3 6,625	387,129	20,504	27·71	32·45	4·74
All other Districts ...	10,003	5,613	— 4,390	242,381	138,749	— 103,632	24·23	24·72	0·49
Total State	165,124	149,505	— 15,619	4,188,586	4,105,974	— 82,612	25·37	27·46	2·09

H.
OATS.

TABLE SHOWING HOW CROP WAS DEALT WITH FOR FIVE YEARS.

Oats.	1914.	1915.	1916.	1917.	1918.
	Acres.	Acres.	Acres.	Acres.	Acres.
Reaped for grain	2,728	339	6,564	3,002	298
Mown for hay	12,573	6,377	30,041	10,901	1,803
Cut for green fodder	30,081	20,398	18,080	16,439	11,109
Totals	45,382	27,114	54,685	30,342	13,210

H a.
OATS.

RESULT OF THE GRAIN CROP FOR TWO YEARS.

Year.	Area for Grain.	Produce.	Average per Acre.
	Acres.	Bushels.	Bushels.
1917	3,002	44,688	14·89
1918	298	3,632	12·19
Decrease, 1918	2,704	41,056	2·70

J.
RYE.

AREA AND PRODUCE OF THE GRAIN CROP FOR FIVE YEARS.

Year.	Area.	Produce.	Average per Acre.
	Acres.	Bushels.	Bushels.
1914	81	727	8·98
1915	26	529	20·35
1916	131	1,668	12·73
1917	43	595	13·84
1918	2	20	10·00

J a.
POTATOES.

AREA AND YIELD FOR FIVE YEARS.

POTATOES (ENGLISH).

	Acres.	Tons.	Value.
1914 ..	8,385 ..	16,014 ..	£138,521
1915 ..	5,796 ..	7,439 ..	£89,268
1916 ..	8,908 ..	19,457 ..	£218,891
1917 ..	10,738 ..	22,139 ..	£196,484
1918 ..	6,434 ..	11,083 ..	£102,241

K.
COTTON.

RESULT FOR THE PAST TWO YEARS.

Division or Group.	1917.		1918.	
	Acres.	Lb. Seed Cotton.	Acres.	Lb. Seed Cotton.
Moreton	11	9,811	29	19,031
Wide Bay	12	6,317	27	10,161
Port Curtis	64	39,271	34	19,149
Edgecumbe	2	2,554	1	1,990
Rockingham	2	1,874	...	...
York Peninsula	2	200	...	...
Carpentaria	...	...	...	...
Central Western	...	...	...	...
South Western	...	...	...	...
Central	5	2,537	31	19,568
Maranoa	12	4,300	34	16,748
Downs	23	9,792	47	14,798
Total State	133	76,656	203	101,445

L.
SUGAR.

Number of Plantations, Etc.

—	Number of Plantations.	Area under Cane.	Average to each Planter.
		Acres.	Acres.
No. 1 District	1,076	57,944	54
No. 2 District	1,743	62,103	36
No. 3 District	1,113	37,493	34
No. 4 District	216	2,994	14
Total	4,148	160,534	39

L a.

Summary for Five Years.

Year.	Acres Cultivated.	Acres Crushed.	Produce.	
			Tons Cane.	Tons Sugar, at 94 per cent. Net Titre.
1914	161,195	108,013	1,922,633	225,847
1915	153,027	94,459	1,152,516	140,496
1916	167,221	75,914	1,579,514	176,973
1917	175,762	108,707	2,704,211	307,714
1918	160,534	111,572	1,674,829	189,978

L b.

Percentages of Yields for Five Years.

Year.	To each acre crushed.		Tons of Cane to One Ton of Sugar.
	Tons of Cane.	Tons of Sugar.	
1914	17·80	2·09	8·51
1915	12·20	1·49	8·20
1916	20·81	2·33	8·93
1917	24·88	2·83	8·79
1918	15·01	1·70	8·82

L c.

Details of Crops, Each Division, 1918.

Division and District.	Area for Plants.	Area Stand-over or Unproductive.	Area Crushed for Sugar.	Total Area for Sugar.	Weight of Cane.	Sugar, 94 N.T.	Molasses Returned.
Rockingham and York Peninsula—	Acres.	Acres.	Acres.	Acres.	Tons.	Tons.	Gallons.
Cairns and Douglas	664	6,010	16,923	23,597	267,254	30,655	1,384,080
Ingham and Mourilyan	1,340	10,915	22,092	34,347	270,616	31,518	1,411,626
Total	2,004	16,925	39,015	57,944	537,870	62,173	2,795,706
Edgecumbe—							
Ayr and Townsville	267	4,422	17,854	22,543	374,188	39,983	876,155
Proserpine and Bowen	68	1,394	2,672	4,134	24,800	6,662	346,550
Mackay	751	11,837	22,838	35,426	203,159	22,587	1,109,079
Total	1,086	17,653	43,364	62,103	602,147	69,232	2,331,784
Wide Bay—							
Bundaberg, Gin Gin, &c.* ...	98	5,053	16,294	21,445	253,774	30,940	1,228,505
Biggenden, Childers, Maryborough, Tiaro, &c.	123	4,601	10,747	15,471	247,453	24,367	1,270,260
Gympie	...	26	21	47	326	†	...
Total	221	9,680	27,062	36,963	501,553	55,307	2,498,765
Port Curtis—							
Gladstone*	...	92	424	516	5,322	455	17,000
St. Lawrence§	...	5	9	14	53	§	...
Moreton—							
Logan‡	8	404	717	1,129	11,707	808	22,792
Townshend, Rosewood, &c.† ...	7	8	94	109	1,576	17	...
Maroochy, &c.	...	869	713	1,582	13,797	1,756	124,344
Nerang and Southport	...	...	174	174	804	230	9,000
Total	15	1,281	1,698	2,994	27,884	2,811	156,136
Total of State	3,326	45,636	111,572	160,534	1,674,829	189,978	7,799,391

* Part crushed in Bundaberg. † Mostly crushed in Maroochy. ‡ Part crushed in Nerang. § Crushed in Mackay.

L d.

SUGAR AVERAGES, 1918.

Divisions or Groups and Districts.	Tons of Cane per Acre Crushed.	Tons of Sugar per Acre Crushed.	Tons of Cane per Ton of Sugar.
Rockingham and York Peninsula—			
Cairns and Douglas	15·79	1·81	8·72
Ingham and Mourilyan	12·25	1·43	8·59
Total	13·79	1·59	8·65
Edgecumbe—			
Ayr and Townsville§	20·96	2·27	8·55
Bowen and Proserpine	9·28		
Mackay	8·90	0·99	9·00
Total	13·89	1·60	8·70
Wide Bay—			
Bundaberg, Gin Gin, &c.	15·57	1·88	8·25
Biggenden, Childers, Maryborough, Tiaro, &c.	23·03	2·27	10·16
Gympie	15·52	*	*
Total	18·53	2·03	9·08
Port Curtis—			
Gladstone	12·55	†	†
St. Lawrence	5·89	**	**
Moreton—			
Logan	16·33	‡ 1·16	‡ 12·05
Townshend, Rosewood, &c.	16·77	*	*
Maroochy, &c.	19·35	2·14	8·85
Nerang and Southport	4·62	...	...
Total	16·42	1·64	10·04
TOTAL STATE	15·01	1·70	8·82

* Mostly crushed in Maroochy. † Part crushed in Bundaberg. ‡ Including Nerang and Southport.
§ Part crushed at Proserpine. ** Crushed at Mackay.

L e.

IN EACH DIVISION OF THE STATE—TWO YEARS.

Division.	AREA UNDER CULTIVATION.			PRODUCTION.					
				1917.		1918.		Increase or —Decrease in 1918.	
	1917.	1918.	Increase or —Decrease	Area Crushed.	Sugar.	Area Crushed.	Sugar.	Area Crushed.	Sugar.
	Acres.	Acres.	Acres.	Acres.	Tons.	Acres.	Tons.	Acres.	Tons.
Rockingham and York Peninsula	58,363	57,944	— 419	41,409	112,486	39,015	62,173	— 2,394	— 50,313
Edgecumbe	69,909	62,103	— 7,806	36,604	99,836	43,364	69,232	6,760	— 30,604
Port Curtis*	556	530	— 26	416	766	433	455	17	— 311
Wide Bay†	43,466	36,963	— 6,503	27,980	89,283	27,062	55,307	— 918	— 33,976
Moreton	3,468	2,994	— 474	2,298	5,343	1,698	2,811	— 600	— 2,532
Total	175,762	160,534	—15,228	108,707	307,714	111,572	189,978	2,865	— 117,736

* Part crushed in Wide Bay. † Most of the cane grown in Gympie was crushed in the Moreton Division.

L f.

PERCENTAGES IN EACH DIVISION OF THE STATE—TWO YEARS.

Division.	TO EACH ACRE CRUSHED.				TONS CANE TO EACH TON SUGAR.	
	Tons of Cane.		Tons of Sugar.		1917.	1918.
	1917.	1918	1917.	1918.		
Rockingham and York Peninsula	23·03	13·79	2·72	1·59	8·48	8·65
Edgecumbe	24·30	13·89	2·73	1·60	8·91	8·70
Port Curtis	23·28	12·41	*	*	*	*
Wide Bay	28·75	18·53	3·17	2·03	9·01	9·08
Moreton	20·40	16·42	2·33	1·64	9·19	10·04
Total	24·88	15·01	2·83	1·70	8·79	8·82

* Included in Wide Bay and Edgecumbe.

L g.

PRODUCTION IN AUSTRALIA, 1918.

—	Area under Cultivation.	Area Cut or Dug for Manufacture.	Yield of Cane, &c.	Sugar Obtained.
	Acres.	Acres.	Tons.	Tons.
Queensland	160,534	168,562	1,674,829	189,978
New South Wales	10,722	5,588	174,881	19,875
Victoria (beet)*	...	...	...	...

* Information not available.

L h.

MILLS IN QUEENSLAND.

Manufactories.		Works.	Hands Employed.	VALUE.	
				Machinery.	Land and Premises.
		No.	No.	£	£
Refineries } In operation, 1918	... ...	2	392	3,458,926	547,266
Sugar Mills }	... ...	42	5,214		
Total		44	5,606		

NOTE.—In addition, 3 mills closed during the year had machinery and plant valued at £43,712, and land and premises valued at £2,927

L i.

SUGAR MILLS.

1. Number of Sugar Mill Companies to which advances have been made under—
   - The Sugar Works Guarantee Acts 13
   - "*The Sugar Works Act of* 1911" (Babinda and South Johnstone) 2
   - From Consolidated Revenue (North Eton and Racecourse) 2
   - From General Loan Fund 7
2. Number of Tramway Companies to which advances have been made under—
   - The Sugar Works Guarantee Acts (Double Peak) 1
   - Under other conditions ... ... None
3. Total amount of advances made to 31st December, 1918, under the Sugar Works Guarantee Acts—

	£ s. d.	£ s. d.
Marian Mill	39,000 0 0	
Mount Bauple	32,480 16 1	
Pleystowe	35,472 1 3	
Nerang River	19,998 18 10	
Gin Gin	50,000 0 0	
Plane Creek	65,000 0 0	
Double Peak	18,200 0 0	
Proserpine	54,000 0 0	
Moreton	32,864 15 0	
Mulgrave	46,000 0 0	
Isis	38,636 0 0	
Mossman	66,300 0 0	
Johnstone	847 17 8	
		498,800 8 10
Under "*The Sugar Works Act of* 1911"—		
Babinda Mill	332,334 12 2	
South Johnstone Mill	470,497 1 9	
		802,831 13 11
From Consolidated Revenue—		
North Eton Mill	26,000 0 0	
Racecourse Mill	21,000 0 0	
		47,000 0 0
From General Loan Fund—		
North Eton Mill	9,243 11 2	
Mount Bauple Mill	8,500 0 0	
Gin Gin	2,000 0 0	
Double Peak	4,453 2 11	
Proserpine Mill	17,765 9 4	
Moreton Mill	14,350 0 0	
Mossman Mill	11,071 14 0	
		67,383 17 5

4. Indebtedness at 31st December, 1918, under the Sugar Works Guarantee Acts—

	£ s. d.	£ s. d.
Mount Bauple Mill	27,888 9 3	
Pleystowe Mill	5,881 14 8	
Nerang Mill	30,760 3 6	
Gin Gin Mill	18,562 2 1	
Plane Creek Mill	11,207 6 1	
Double Peak Mill	8,631 0 4	
Proserpine Mill	22,197 19 11	
Mulgrave Mill	14,829 16 5	
Isis Mill	5,541 16 2	
Mossman Mill	25,601 19 1	
Johnstone Mill	740 7 8	
		171,842 15 2
Under "*The Sugar Works Act of* 1911"—		
Babinda Mill	332,334 12 2	
South Johnstone Mill	470,497 1 9	
		802,831 13 11
From Consolidated Revenue—North Eton Mill		6,542 18 10
From General Loan Fund—		
North Eton Mill	2,710 3 9	
Mount Bauple Mill	8,670 0 0	
Double Peak Mill	2,111 9 7	
Proserpine Mill	3,786 12 9	
Mossman Mill	9,303 7 1	
		26,581 13 2

M.

ARROWROOT.

DISTRICTS WHERE CULTIVATED AND PRODUCTION—TWO YEARS.

Petty Sessions District.	1917.		1918.		Increase or Decrease —	
	Area.	Produce.	Area.	Produce.	Produce.	Area.
	Acres.	Tons.	Acres.	Tons.	Tons.	Acres.
Brisbane (A)	2	7	1	2	— 1	— 5
Brisbane (B)	1	2	...	...	— 1	— 2
Caboolture	...	...	1	10	1	10
Dugandan	1	1	...	...	— 1	— 1
Gladstone	2	1	1	1	— 1	...
Gympie	3	34	1	1	— 2	— 33
Ipswich	3	8	...	...	— 3	— 8
Kilcoy	2	13	...	...	— 2	— 13
Logan	95	993	177	1,672	82	679
Lowood	6	17	4	15	— 2	— 2
Maroochy	2	39	4	68	2	29
Nerang	208	2,475	226	3,710	18	1,235
Pittsworth	14	246	...	...	— 14	—246
Rosewood	4	30	3	27	— 1	— 3
Tiaro	2	1	1	2	— 1	1
Townshend	22	146	4	20	— 18	—126
Wienholt	1	6	...	...	— 1	— 6
Woodford	...	...	1	1	1	1
Total State	368	4,019	424	5,529	56	1,510

M a.

ARROWROOT.

DETAILS OF MANUFACTURE.

Petty Sessions District.	Hands Employed.	Tuber.	Arrowroot.
	No.	Tons.	Lb.
Logan Nerang	71	5,295	1,210,716

N.

TOBACCO.

DISTRICTS WHERE CULTIVATED AND YIELD—TWO YEARS.

Division and Petty Sessions District.	1917.		1918.		Increase or Decrease —	
	Area.	Produce Dried Leaf.	Area.	Produce Dried Leaf.		
	Acres.	Lb.	Acres.	Lb.	Acres.	Lb.
Moreton—						
Cleveland	...	...	1	512	1	512
Lowood	1	144	5	5,598	4	5,454
Edgecumbe—						
Bowen	34	29,529	12	10,615	— 22	— 18,914
Proserpine	10	5,959	12	9,888	2	3,929
Townsville	10	10,408	10	5,036	...	— 5,372
Rockingham—						
Cairns	2	220	...	...	— 2	— 220
Cardwell	...	...	1	150	1	150
Downs—						
Inglewood	75	26,420	76	42,179	1	15,759
Texas	157	34,896	96	39,164	— 61	4,268
Total State	289	107,576	213	113,142	— 76	5,566

O.

COFFEE.

DISTRICTS WHERE CULTIVATED AND YIELD—TWO YEARS.

DIVISION AND PETTY SESSIONS DISTRICT.	Not Bearing.		Bearing.				Average per Acre (Bearing).		1918. Increase or Decrease—Bearing Area.	1918. Increase or Decrease—in Produce.
	1917.	1918.	1917.		1918.		1917.	1918.		
	Acres.	Acres.	Acres.	Lb. (Parchment.)	Acres.	Lb. (Parchment.)	Lb.	Lb.	Acres.	Lb.
Moreton—										
Maroochy	...	½	21	6,446	12	5,369	307	447	— 9	— 1,077
Wide Bay—										
Maryborough	...	...	4	1,200	4	3,000	300	750	...	1,800
Edgecumbe—										
Mackay	...	...	8	2,000	8	1,400	250	175	...	— 600
Proserpine	1	1	...	...	...	...	...	...	...	...
Total Edgecumbe ...	1	1	8	2,000	8	1,400	250	175	...	— 600
Rockingham—										
Cairns	...	...	4	1,370	...	...	243	...	— 4	— 1,370
Herberton	...	...	12	5,126	3	3,360	427	1,120	— 9	— 1,766
Total Rockingham ...	...	...	16	6,496	3	3,360	406	1,120	— 13	— 3,136
York Peninsula—										
Cook	...	...	1	100	...	...	100	...	— 1	— 100
Totals	1	2	50	16,242	27	13,129	325	486	— 23	— 3,113

Q.

VINES.

SUMMARY OF AREA AND YIELD—TWO YEARS.

Year.	VINEYARD.			Grapes Gathered.	Average per Acre (Bearing).
	Acres Bearing.	Acres not Bearing.	Total.		
				Lb.	Lb.
1917	1,140	134	1,274	1,838,511	1,613
1918	1,175	112	1,287	1,725,081	1,468

Qa.

DETAILS OF PRINCIPAL DISTRICTS—TWO YEARS.

Petty Sessions District.	AREA UNDER VINES.							1917.	1918.
	1917.			1918.			Increase or Decrease—.		
	Bearing.	Not Bearing.	Total Area.	Bearing.	Not Bearing.	Total Area.		Grapes Gathered.	Grapes Gathered.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Lb.	Lb.
Brisbane (A)	318	12	330	317	7	324	— 6	510,360	510,587
Brisbane (B)	11	...	11	11	2	13	2	17,634	15,114
Bundaberg	11	4	15	9	3	12	— 3	13,924	10,615
Clifton	12	...	12	6	...	6	— 6	17,493	5,450
Gatton	10	3	13	6	2	8	— 5	12,278	8,765
Gympie	10	...	10	11	...	11	1	17,300	27,742
Laidley	12	1	13	10	1	11	— 2	33,396	17,167
Logan	13	1	14	12	...	12	— 2	30,540	30,656
Lowood	42	2	44	72	6	78	34	111,890	114,162
Maryborough	24	4	28	24	3	27	— 1	48,992	40,102
Redcliffe	6	1	7	7	...	7	...	15,394	16,062
Rockhampton	24	2	26	20	1	21	— 5	35,757	26,260
Roma	343	29	372	339	23	362	— 10	302,398	190,751
Stanthorpe	75	48	123	94	44	138	15	107,695	147,395
Toowoomba	38	1	39	34	...	34	— 5	48,930	44,544
Townshend	14	...	14	14	...	14	...	21,507	8,200
Warwick	11	8	19	32	1	33	14	21,666	46,989
Wynnum	24	4	28	16	2	18	— 10	94,200	94 020
All other Districts	142	14	156	141	17	158	2	377,157	370,500
Totals	1,140	134	1,274	1,175	112	1,287	13	1,838,511	1,725,081

N.B.—Brisbane (B) refers to South Brisbane.

Q b.

VINES.

AVERAGE, PRINCIPAL DISTRICTS—FIVE YEARS.

Petty Sessions District.	1914. Average per Acre.	1915. Average per Acre.	1916. Average per Acre.	1917. Average per Acre.	1918. Average per Acre.
	Lb.	Lb.	Lb.	Lb.	Lb.
Brisbane	2,171	1,774	1,524	1,605	1,611
Roma	3,450	3,612	1,054	882	563
Brisbane (B), including Wynnum	2,698	2,799	2,567	3,195	4,042
Toowoomba	2,774	1,262	1,692	1,288	1,310
State	2,951	2,556	1,671	1,613	1,468

Brisbane (B) refers to South Brisbane.

Q c.

WINE.

MAKERS, WINE MADE, AND WINE SPIRIT DISTILLED—FIVE YEARS.

Year.	Number of Makers.	Quantity of Wine Made.	Quantity of Wine Spirit Distilled.
		Gallons.	Gallons.
1914	167	51,164	4,254
1915	136	59,008	2,839
1916	96	23,171	2,489
1917	103	39,125	1,326
1918	90	44,491	1,029

Q d.

PRINCIPAL DISTRICTS WHERE MADE.

Petty Sessions District.	Number of Makers.	Quantity of Wine Made.	Quantity of Wine Spirit Distilled.
		Gallons.	Gallons.
Brisbane (A and B), including Wynnum	13	3,896	...
Highfields	7	691	...
Logan	3	720	...
Lowood	1	5,000	...
Roma	4	23,500	...
Toowoomba	20	2,132	...
Warwick	1	2,000	...
All other Districts	41	6,552	...
Totals	90	44,491	1,029

N.B.—Brisbane (B) refers to South Brisbane.

R.
BANANAS.

DETAILS IN PRINCIPAL DISTRICTS—TWO YEARS.

Petty Sessions District.	Area.		Produce.		Increase or Decrease —	
	1917.	1918.	1917.	1918.	Area.	Produce.
	Acres.	Acres.	Bunches.	Bunches.	Acres.	Bunches.
Brisbane (A)	949	845	176,716	156,842	— 104	— 19,874
Cairns	669	430	100,741	21,756	— 239	— 78,985
Cardwell	66	1	7,550	412	— 65	— 7,138
Cleveland	283	181	49,947	33,208	— 102	— 16,739
Gympie	868	887	118,906	163,155	19	44,249
Logan	439	339	64,642	78,965	— 100	14,323
Maroochy	2,608	2,086	353,023	305,771	— 522	— 47,252
Maryborough	475	460	94,663	81,115	— 15	— 13,548
Mourilyan	72	41	4,250	2,176	— 31	— 2,074
Nerang	450	461	22,669	65,112	11	42,443
Redcliffe	746	662	167,575	161,606	— 84	— 5,969
Rockhampton	81	112	11,007	13,587	31	2,580
Somerset	13	111	1,333	11,786	98	10,453
Townsville	269	186	48,230	30,700	— 83	— 17,530
All other Districts	1,153	1,015	135,585	141,450	— 138	5,865
Totals	9,141	7,817	1,356,837	1,267,641	— 1,324	— 89,196

R a.
BANANAS.

YIELD PER ACRE IN PRINCIPAL DISTRICTS.

	Average per Acre — Bunches.		Average per Acre — Bunches.
Brisbane	186	Logan	233
Cairns	51	Maroochy	147
Cardwell	412	Maryborough	176
Cleveland	183	Mourilyan	53
Gympie	184	Redcliffe	244

S.
PINEAPPLES.

DETAILS IN PRINCIPAL DISTRICTS—TWO YEARS.

Petty Sessions District.	1917.		1918.		Increase or Decrease —	
	Area.	Produce.	Area.	Produce.	Area.	Produce.
	Acres.	Dozen.	Acres.	Dozen.	Acres.	Dozen.
Brisbane (A)	685	199,449	600	229,271	— 85	29,822
Brisbane (B)	184	33,635	162	29,210	— 22	— 4,425
Bundaberg	47	8,364	48	6,953	1	— 1,411
Caboolture	158	25,336	117	22,479	— 41	— 2,857
Cairns	161	46,547	138	18,090	— 23	— 28,457
Cleveland	750	169,341	908	175,111	158	5,770
Logan	206	63,001	171	44,761	— 35	— 18,240
Maroochy	1,181	259,153	1,128	211,978	— 53	— 47,175
Maryborough	191	42,338	150	29,968	— 41	— 12,370
Mourilyan	43	6,010	4	255	— 39	— 5,755
Redcliffe	50	9,049	50	13,314	...	4,265
Rockhampton	114	22,442	93	16,196	— 21	— 6,246
Tiaro	101	13,768	67	11,446	— 34	— 2,322
Wynnum	39	13,408	135	20,041	96	6,633
All other Districts	256	32,441	255	30,875	— 1	— 1,566
Totals	4,166	944,282	4,026	859,948	— 140	— 84,334

N.B.—Brisbane (B) refers to South Brisbane.

T.

ORANGES.

DETAILS IN PRINCIPAL DISTRICTS—TWO YEARS.

Petty Sessions District.	Area.		Bearing, 1918.	Not yet Bearing, 1918.	Produce.		Increase or Decrease —	
	1917.	1918.	Area.	Area.	1917.	1918.	Area.	Produce.
	Acres.	Acres.	Acres.	Acres.	Bushels.	Bushels.	Acres.	Bushels.
Bowen	224	181	154	27	9,310	6,140	– 43	– 3,170
Brisbane (A)	27	39	18	21	3,165	3,136	12	– 29
Brisbane (B)	28	20	13	7	4,452	855	– 8	– 3,597
Bundaberg	84	65	57	8	17,522	9,569	– 19	– 7,953
Caboolture	55	35	19	16	7,539	2,153	– 20	– 5,386
Cairns	259	229	202	27	34,471	32,021	– 30	– 2,450
Caps River	20	9	8	1	1,194	975	– 11	– 219
Cardwell	98	96	84	12	5,117	1,366	– 2	– 3,751
Charters Towers	29	30	28	2	4,308	3,674	1	– 634
Childers	48	39	31	8	3,502	4,140	– 9	638
Cleveland	58	51	16	35	5,344	3,444	– 7	– 1,900
Cook	60	69	47	22	1,885	4,528	9	2,643
Douglas	51	35	23	12	1,307	1,470	– 16	163
Esk	48	41	35	6	5,727	2,390	– 7	– 3,337
Gatton	96	83	70	13	9,690	4,958	– 13	– 4,732
Gayndah	32	37	25	12	2,286	3,586	5	1,300
Gladstone	39	33	25	8	3,798	4,510	– 6	712
Gympie	38	26	17	9	2,541	2,428	– 12	– 113
Helidon	66	58	52	6	6,084	1,789	– 8	– 4,295
Herberton	35	34	21	13	2,645	2,460	– 1	– 185
Ingham	28	24	19	5	1,894	4,799	– 4	2,905
Ipswich	25	25	10	15	624	286	...	– 338
Laidley	31	21	17	4	1,610	1,094	– 10	– 516
Logan	104	104	87	17	28,250	16,408	...	– 11,842
Lowood	23	22	22	...	1,252	374	– 1	– 878
Mackay	32	29	19	10	7,509	1,283	– 3	– 6,226
Maroochy	1,243	1,292	659	633	119,074	111,602	49	– 7,472
Maryborough	632	457	321	136	36,174	31,467	– 175	– 4,707
Nerang	49	68	52	16	6,039	6,743	19	704
Proserpine	28	28	20	8	2,244	2,350	...	106
Redcliffe	30	28	17	11	5,358	4,888	– 2	– 470
Rockhampton	180	162	133	29	15,830	11,563	– 18	– 4,267
Tiaro	60	57	49	8	3,389	2,257	– 3	– 1,132
Toowoomba	43	47	38	9	2,577	2,256	4	– 321
Woodford	18	16	7	9	2,478	534	– 2	– 1,944
All other Districts	380	311	196	115	34,810	19,741	– 69	– 15,069
Total	4,301	3,901	2,611	1,290	400,999	313,237	– 400	– 87,762

N.B.—Brisbane (B) refers to South Brisbane.

U.

MANGOES.

DETAILS IN PRINCIPAL DISTRICTS—TWO YEARS.

Petty Sessions District.	Area.		Bearing, 1918.	Not yet Bearing, 1918.	Produce.		Increase or Decrease — 1918.	
	1917.	1918.			1917.	1918.		
	Acres.	Acres.	Acres.	Acres.	Bushels.	Bushels.	Acres.	Bushels.
Bowen	28	30	26	4	9,059	9,698	2	639
Brisbane (A)	27	12	11	1	360	1,235	– 15	875
Bundaberg	11	14	13	1	457	1,886	3	1,429
Cairns	17	15	13	2	3,958	2,320	– 2	– 1,638
Childers	6	5	4	1	11	1,583	– 1	1,572
Cleveland	6	9	7	2	396	263	3	– 133
Douglas	9	13	11	2	1,027	923	4	– 104
Herberton	9	9	6	3	663	1,133	...	470
Ingham	25	26	24	2	2,143	5,491	1	3,348
Logan	16	9	9	...	242	417	– 7	175
Mackay	26	21	19	2	4,736	3,564	– 5	– 1,172
Maryborough	20	18	18	...	1,011	533	– 2	– 478
Proserpine	19	18	15	3	873	2,413	– 1	1,540
Redcliffe	13	12	9	3	1,186	984	– 1	– 202
Rockhampton	34	35	33	2	3,080	4,369	1	1,289
Tiaro	7	6	6	...	130	1,023	– 1	893
Townsville	15	11	9	2	1,913	5,741	– 4	3,828
All other Districts	64	60	51	11	14,071	13,141	– 4	– 930
Totals	352	323	282	41	45,316	56,717	– 29	11,401

V.

STRAWBERRIES.

DETAILS IN PRINCIPAL DISTRICTS—TWO YEARS.

Petty Sessions District.	Area.		Produce.		Increase or Decrease —	
	1917.	1918.	1917.	1918.	1918.	1918.
	Acres.	Acres.	Quarts.	Quarts.	Acres.	Quarts.
Brisbane (A)	9	6	3,005	1,301	– 3	– 1,704
Brisbane (B)	...	1	...	490	1	490
Bundaberg	5	4	2,715	1,120	– 1	– 1,595
Cleveland	29	10	18,857	8,161	– 19	– 10,696
Maroochy	30	34	27,718	28,516	4	798
Rockhampton	1	2	600	2,300	1	1,700
All other Districts	14	11	8,163	7,165	– 3	– 998
Totals	88	68	61,058	49,053	– 20	– 12,005

N.B.—Brisbane (B) refers to South Brisbane.

W.

APPLES.

DETAILS IN PRINCIPAL DISTRICTS—TWO YEARS.

Petty Sessions District.	Area.		Increase or Decrease — 1918.	Bearing, 1918.	Not Bearing, 1918.	Produce.		Increase or Decrease — 1918.
	1917.	1918.				1917.	1918.	
	Acres.	Acres.	Acres.	Acres.	Acres.	Bushels.	Bushels.	Bushels.
Crow's Nest	7	2	– 5	2	...	393	133	– 260
Dalby	3	2	– 1	1	1	91	15	– 76
Goombungee	2	1	– 1	1	...	100	27	– 73
Herberton	7	7	...	3	4	68	64	– 4
Highfields	2	2	...	2	...	287	198	– 89
Nanango	4	11	7	7	4	68	656	588
Nerang	1	3	2	3	...	24	6	– 18
Stanthorpe	2,281	2,424	143	1,670	754	51,685	72,177	20,492
Toowoomba	13	13	...	10	3	167	518	351
Warwick	13	7	– 6	2	5	509	62	– 447
All other Districts	30	22	– 8	17	5	966	559	– 407
Totals	2,363	2,494	131	1,718	776	54,358	74,415	20,057

Wa.

OTHER FRUITS.

	Acres.	Yield.
Apricots	104	3,445 bushels
Cape gooseberries	4	300 quarts
Cherries	29	564 bushels
Citrons	10	54 bushels
Custard apples	159	18,771 bushels
Figs	8	718 bushels
Lemons	290	17,740 bushels
Nectarines	199	7,070 bushels
Passion fruit	38	5,553 bushels
Paw-paws	139	47,461 dozen
Peaches	1,732	73,410 bushels
Pears	263	5,010 bushels
Persimmons	26	1,694 bushels
Plums	616	12,388 bushels
Quinces	45	504 bushels
Rosellas	2	250 bushels
Walnuts	3	40 bushels
Olives	1	11 bushels

X.

OTHER VEGETABLES.

RETURN FOR TWO YEARS.

Other Vegetables.	1917.		1918.	
	Acres.	Produce.	Acres.	Produce.
Pulse { Beans	11	209 bushels	15	904 bushels
Pulse { Peas	17	372 bushels	55	1,004 bushels
Green { Beans	197	17,214 bushels	213	21,799 bushels
Green { Peas	178	9,964 bushels	235	14,184 bushels
Cabbages and Cauliflowers	658	174,665 dozen	645	144,709 dozen
Cucumbers	208	108,919 dozen	163	55,896 dozen
Onions	71	4,410 cwt.	88	2,212 cwt.
Tomatoes	1,452	141,940 bushels	1,301	135,275 bushels
Turnips	49	241 tons	49	190 tons

X a.

PRINCIPAL OTHER CROPS.

RETURN FOR TWO YEARS.

	1917.		1918.	
	Acres.	Produce.	Acres.	Produce.
Cocoanuts	919	19,815 dozen and 2¼ tons copra	1,074	18,836 dozen and 1½ tons copra
Broom millet	393	182,405 lb.	235	103,585 lb.
Canary seed	7,596	4,406,904 lb.	1,333	810,700 lb.
Indiarubber	13	...	6	...
Grass seed	819	9,365 bushels	668	3,250 bushels
Mangold wurzel	51	444 tons	35	182 tons
Peanuts	175	239,396 lb.	153	169,448 lb.
Sisal hemp	50	240 cwt.	10	...
Lucerne seed	46	2,820 lb.	20	1,080 lb.
Millet seed	547	13,721 bushels	70	1,380 bushels

X b.

PASTURAGE—FIVE YEARS.

	1914. Acres.	1915. Acres.	1916. Acres.	1917. Acres.	1918. Acres.
Hay	79,327	55,174	112,964	96,431	54,772
Green forage	184,239	236,293	116,449	87,909	90,635
Artifically sown pasture	290,147	305,186	363,876	406,094	418,467
Total	553,713	596,653	593,289	590,434	553,874

Y.

HAY—TWO YEARS.

Hay Crops.	Area.		Increase or Decrease—	Produce.		Increase or Decrease—
	1917.	1918.		1917.	1918.	
	Acres.	Acres.	Acres.	Tons.	Tons.	Tons.
Wheat	7,247	1,902	— 5,345	7,369	1,312	— 6,057
Oats	10,901	1,803	— 9,098	13,027	1,959	— 11,068
Lucerne	73,347	48,264	— 25,083	125,642	84,550	— 41,092
Other	4,936	2,803	— 2,133	7,857	4,409	— 3,448
Totals	96,431	54,772	— 41,659	153,895	92,230	— 61,665

Z.

ARTIFICIALLY GROWN PASTURE—TWO YEARS.

Petty Sessions District.	1917.	1918.	Increase, 1918.	Decrease, 1918.
	Acres.	Acres.	Acres.	Acres.
Beaudesert	5,905	6,212	307	...
Biggenden	15,828	16,429	601	...
Caboolture	2,632	2,080	...	552
Condamine	2,742	2,477	...	265
Dalby	36,809	36,304	...	505
Dugandan	3,213	3,292	79	...
Eidsvold	857	402	...	455
Esk	1,679	1,967	288	...
Gatton	5,429	4,082	...	1,347
Gayndah	19,088	21,641	2,553	...
Gladstone	8,574	8,342	...	232
Goondiwindi	4,325	7,153	2,828	...
Gympie	73,168	68,447	...	4,721
Helidon	2,965	3,142	177	...
Herberton	29,864	34,751	4,887	...
Maroochy	42,839	42,197	...	642
Nanango	33,476	29,957	...	3,519
Nerang	16,682	22,334	5,652	...
Pittsworth	8,971	10,023	1,052	...
Redcliffe	1,500	1,068	...	432
Rockhampton	21,315	21,337	22	...
Tiaro	3,685	3,571	...	114
Wienholt	42,459	48,360	5,901	...
Woodford	7,931	9,693	1,762	...
All other Districts	14,158	13,206	...	952
Totals	406,094	418,467	12,373	...

Z a.

ENSILAGE—TWO YEARS.

Petty Sessions District.	1917.		1918.		Increase, 1918.	Decrease, 1918.
	No. of Makers.	Tons.	No. of Makers.	Tons.	Tons.	Tons.
Allora	1	65	...	...	...	65
Beaudesert	2	50	4	176	126	...
Biggenden	2	250	...	...	...	250
Brisbane (A)	3	318	1	150	...	168
Brisbane (B)	2	200	1	100	...	100
Bundaberg	...	...	1	4	4	...
Cairns	1	80	...	...	...	80
Cleveland	1	5	...	...	...	5
Clifton	...	...	1	25	25	...
Condamine	1	6	...	...	...	6
Dalby	8	280	2	60	...	220
Dugandan	1	85	...	...	...	85
Esk	9	1,135	8	925	...	210
Gatton	1	345	2	268	...	77
Gayndah	1	5	...	...	...	5
Gin Gin	...	...	1	50	50	...
Gladstone	2	253	...	...	...	253
Gympie	3	100	2	80	...	20
Harrisville	...	...	1	14	14	...
Herberton	...	...	1	120	120	...
Highfields	...	...	1	40	40	...
Ipswich	...	...	1	140	140	...
Jondaryan	...	...	1	200	200	...
Kilcoy	1	70	...	...	...	70
Killarney	...	...	1	200	200	...
Laidley	2	30	...	...	...	30
Logan	1	24	...	...	...	24
Maroochy	...	...	1	90	90	...
Maryborough	1	5	...	...	...	5
Nanango	2	180	1	70	...	110
Oakey	2	120	...	...	...	120
Pittsworth	...	...	1	20	20	...
Redcliffe	1	15	...	...	...	15
Rockhampton	4	327	4	289	...	38
Roma	1	70	2	60	...	10
Texas	1	18	...	...	...	18
Toowoomba	2	250	2	160	...	90
Wienholt	4	270	5	300	30	...
Totals	60	4,556	45	3,541	...	1,015

N.B.—Brisbane (B) refers to South Brisbane.

Table No. I.

RETURN SHOWING the RESULTS of the DAIRYING INDUSTRY for the YEAR ended 31st DECEMBER, 1918.

District.	Total Milk Obtained.	HOW UTILISED.							ESTABLISHMENTS.			DAIRY CATTLE.		BUTTER MADE.			CHEESE MADE.		
		For Butter on Farms.	For Cheese on Farms.	For Domestic Purposes by Producer.	Separated for Sale.	Sold for Consumption as Milk.	Sold to Condensed Milk Factories.	Sold to Cheese Factories.	Dairying.	Butter Factories.	Cheese Factories.	In Milk.	Dry.	At Factories.	By Farmers.	Total.	At Factories.	By Farmers.	Total.
Moreton—	Gallons.	Gallons.	Gallons.	Gallons.	Gallons.	Gallons.	Gallons.	Gallons.	No.	No.	No.	No.	No.	Lb.	Lb.	Lb.	lb.	Lb.	Lb.
Brisbane (A.)	1,678,200	109,753	...	210,093	345,869	1,012,485	...	...	568	...	...	4,831	1,923	..	35,522	35,522	...	...	...
Brisbane (B.)	900,434	9,908	145	42,391	87,522	760,468	...	...	176	1	...	2,413	1,048	30,392	4,236	34,628	...	100	100
Beaudesert	2,918,030	100,823	...	119,166	2,651,194	46,847	...	...	453	1	...	9,894	5,154	934,776	47,607	982,383	...	...	...
Caboolture	576,070	15,522	...	20,031	531,221	9,296	...	...	111	1	...	2,118	834	2,706,773	7,722	2,714,495	...	...	...
Cleveland	98,694	6,527	...	49,810	6,438	35,919	...	...	109	...	...	317	86	...	1,253	1,253	...	...	...
Cooyar	219,729	16,480	...	18,720	184,529	...	...	...	60	...	...	639	422	...	7,391	7,391	...	...	...
Crow's Nest	1,071,998	86,616	...	67,539	917,843	...	...	...	312	1	...	3,258	1,982	405,987	38,512	444,499	...	...	...
Dugandan	2,278,514	84,655	...	158,317	1,945,313	90,229	...	...	505	1	...	6,853	2,487	1,539,273	39,536	1,578,809	...	...	...
Esk	1,937,644	71,626	...	112,326	765,608	10,680	967,681	9,723	341	1	...	6,691	4,038	230,782	29,940	260,722	...	...	...
Gatton	1,588,820	117,962	...	119,132	1,330,456	21,270	...	...	523	2	...	5,012	1,842	900,257	41,147	941,404	...	...	...
Goodna	65,271	5,526	...	31,041	28,512	192	...	...	29	...	...	259	182	...	2,263	2,263	...	...	...
Harrisville	1,594,957	83,678	...	61,318	1,445,752	584	...	3,625	349	...	...	5,146	2,023	...	36,055	36,055	...	...	...
Helidon	787,863	53,343	...	47,149	686,906	465	...	...	229	...	...	2,696	1,388	...	21,402	21,402	...	...	...
Ipswich	720,854	34,969	...	46,223	505,383	134,279	...	...	186	3	...	2,478	1,487	1,810,135	16,950	1,827,085	...	...	...
Kilcoy	929,036	46,820	...	60,970	818,961	2,285	...	...	131	...	...	3,160	1,126	...	20,609	20,609	...	...	...
Laidley	1,586,192	87,249	...	82,595	1,407,703	8,645	...	...	423	1	...	4,123	1,686	681,041	28,828	709,869	...	...	...
Logan	1,248,950	19,802	...	82,596	1,107,210	39,342	...	...	417	1	...	4,524	1,455	2,444,680	9,181	2,453,861	...	...	...
Lowood	1,199,752	39,402	...	56,022	946,552	80	157,696	...	278	. .	...	3,450	1,746	...	17,268	17,268	...	...	...
Maroochy	5,263,827	146,272	...	194,117	4,920,428	3,010	...	...	809	1	...	12,991	3,690	879,223	71,379	950,602	...	...	...
Nerang	3,296,966	84,905	...	73,126	a 2,855,521	63,648	...	219,766	311	1	1	11,350	3,449	...	36,380	36,380	22,000	...	22,000
Redcliffe	2,767,800	51,711	...	65,292	2,243,702	407,095	...	...	286	1	...	5,832	2,198	503,303	25,000	528,303	...	...	...
Rosewood	1,413,672	58,800	...	58,819	1,225,406	38,653	...	31,994	312	...	1	5,057	1,933	...	29,450	29,450	29,500	...	29,500
Southport	232,534	5,140	...	7,169	180,195	40,030	...	...	29	...	...	726	278	...	2,079	2,079	...	...	...
Townshend	948,488	24,183	...	39,652	883,693	960	...	...	194	1	...	2,733	887	245,759	10,345	256,104	...	...	...
Woodford	952,960	25,768	...	35,631	783,661	...	...	107,900	133	1	5	3,639	1,319	438,132	12,057	450,189	98,602	...	98,602
Wynnum	94,886	5,252	...	12,905	1,760	74,969	...	...	46	...	...	330	119	...	1,517	1,517	...	...	...
Total Moreton	36,372,141	1,392,692	145	1,872,150	28,807,338	2,801,431	1,125,377	373,008	7,320	18	7	110,520	44,782	13,750,513	593,629	14,344,142	150,102	100	150,202
Wide Bay—																			
Biggenden	1,356,561	46,575	20,000	48,590	1,151,600	...	...	89,796	273	1	2	4,191	3,402	575,008	22,166	597,174	125,160	20,000	145,160
Bundaberg	671,488	93,319	...	144,846	366,173	67,150	...	...	389	1	...	2,477	2,034	412,057	31,137	443,194	476,331	...	476,331
Childers	158,487	44,566	...	56,666	54,568	2,687	...	...	185	...	...	659	484	...	19,727	19,727	...	...	...
Eidsvold	41,674	12,750	...	6,896	22,028	...	...	...	26	...	...	182	159	...	3,786	3,786	...	...	...
Gayndah	1,477,221	87,206	...	59,207	1,110,545	5,600	...	214,663	369	2	2	5,635	2,771	572,989	33,864	606,853	168,430	...	168,430
Gin Gin	400,925	70,840	...	45,628	283,727	730	...	...	181	...	...	1,271	1,445	...	24,293	24,293	...	...	...
Gympie	8,636,172	209,707	...	249,220	8,110,695	66,550	...	...	851	3	...	24,085	8,860	3,144,652	66,567	3,211,219	...	...	...
Kilkivan	647,015	38,903	...	32,443	532,540	840	...	42,289	106	...	...	2,471	761	...	13,262	13,262	...	...	...
Maryborough	693,634	92,773	...	76,587	397,349	126,925	...	...	343	1	...	2,682	1,598	625,225	35,616	660,841	...	...	...
Mount Perry	40,373	6,198	...	5,880	27,295	1,000	...	...	22	...	...	231	344	...	3,091	3,091	...	...	...
Nanango	2,828,117	147,681	...	156,224	2,452,975	71,237	...	...	646	2	...	9,685	4,522	1,342,195	61,579	1,403,774	...	...	...
Tiaro	904,802	74,338	...	71,479	758,985	...	...	...	259	...	...	3,354	2,681	...	30,103	30,103	...	...	...
Wienholt	3,999,004	149,472	...	205,901	3,410,366	6,280	...	226,985	639	1	4	11,925	3,953	1,856,403	68,449	1,924,852	236,418	...	236,418
Total Wide Bay	21,855,473	1,074,328	20,000	1,159,567	18,678,846	348,999	...	573,733	4,289	11	8	68,848	33,014	8,528,529	413,640	8,942,169	1,006,339	20,000	1,026,339
Port Curtis—																			
Banana	24,633	15,345	...	9,288	...	...	...	...	27	...	...	164	272	...	3,484	3,484	...	...	...
Gladstone	1,407,904	87,648	...	74,418	1,218,868	26,970	...	...	276	1	...	4,337	3,320	581,957	34,306	616,263	...	...	...
Mount Morgan	51,041	3,207	...	3,937	11,871	32,026	...	...	21	...	...	223	360	...	1,183	1,183	...	...	...
Rockhampton	1,652,682	157,260	...	109,827	1,166,571	219,024	...	...	437	2	...	6,775	5,371	529,130	54,416	583,546	...	...	...
St. Lawrence	10,284	6,644	...	3,275	...	365	...	...	12	...	...	91	102	...	1,364	1,364	...	...	...
Total Port Curtis	3,146,544	270,104	...	200,745	2,397,310	278,385	...	...	773	3	...	11,590	9,425	1,111,087	94,753	1,205,840	...	...	...

a Including 1,065,961 gallons of milk sent to New South Wales.

Table No. I.—*continued.*

RETURN SHOWING the RESULTS of the DAIRYING INDUSTRY for the YEAR ended 31st DECEMBER, 1918—*continued.*

District.	Total Milk Obtained.	HOW UTILISED.							ESTABLISHMENTS.			DAIRY CATTLE.		BUTTER MADE.			CHEESE MADE.		
		For Butter on Farms.	For Cheese on Farms.	For Domestic Purposes by Producer.	Separated for Sale.	Sold for Consumption as Milk.	Sold to Condensed Milk Factories.	Sold to Cheese Factories.	Dairying.	Butter Factories.	Cheese Factories.	In Milk.	Dry.	At Factories.	By Farmers.	Total.	At Factories.	By Farmers.	Total.
	Gallons.	Gallons.	Gallons.	Gallons.	Gallons.	Gallons.	Gallons.	Gallons.	No.	No.	No.	No.	No.	Lb.	Lb.	Lb.	Lb.	Lb.	Lb.
Downs—																			
Allora	944,092	48,081	...	67,034	806,502	17,000	...	5,475	224	1	...	2,466	994	452,480	20,952	473,432	...	...	...
Clifton	1,992,073	58,033	...	101,850	905,508	2,800	...	923,882	380	1	13	4,242	1,702	258,064	24,771	282,835	1,256,609	...	1,256,609
Condamine	640,060	38,046	...	32,731	567,368	1,915	...	...	155	1	...	2,212	1,842	429,455	15,384	444,839	...	...	...
Dalby	3,213,481	169,782	60	188,661	2,345,832	13,446	...	495,700	733	...	...	9,584	6,209	1,092,610	64,268	1,156,878	390,315	40	390,355
Goombungee	657,500	28,400	..	19,100	542,200	...	...	67,800	137	1	3	1,561	842	401,520	14,200	415,720	206,493	...	206,493
Goondiwindi	281,942	10,125	...	8,710	239,707	23,400	...	...	52	1	1	462	579	94,080	3,380	97,460	143,000	...	143,000
Highfields	1,023,651	51,501	...	29,539	761,151	...	...	181,460	217	...	3	2,607	1,127	...	21,615	21,615	270,608	...	270,608
Inglewood	294,874	23,091	...	39,594	181,996	440	...	49,753	101	...	3	892	1,034	...	9,662	9,662	419,009	...	419,009
Jondaryan	853,289	17,472	...	58,438	490,502	...	...	286,877	226	1	8	3,136	1,344	162,296	8,161	170,457	660,286	...	660,286
Killarney	672,334	80,950	...	47,350	499,291	5,413	...	39,330	175	1	2	1,842	1,085	119,262	32,538	151,800	28,370	...	28,370
Oakey	2,052,316	76,443	...	77,140	928,456	6,970	96,998	866,309	417	1	4	5,953	2,138	434,298	30,428	464,726	654,887	...	654,887
Pittsworth	3,306,472	59,984	...	174,058	306,925	7,550	...	2,757,955	516	...	13	...	...	...	18,691	18,691	2,127,874	...	2,127,874
Stanthorpe	114,083	39,558	...	56,261	8,352	9,912	...	...	227	...	...	549	74	...	17,421	17,421	...	...	...
Texas	218,117	20,789	...	13,499	183,829	...	...	...	41	1	...	612	441	94,000	4,840	98,840	...	...	...
Toowoomba	1,728,757	52,420	...	144,655	296,508	164,103	...	1,071,071	494	1	5	4,916	2,043	1,230,118	24,276	1,254,394	648,911	...	648,911
Warwick	2,279,179	212,838	...	195,169	1,047,981	56,567	...	766,624	648	1	7	6,331	3,224	909,440	87,020	996,460	589,849	...	589,849
Total Downs	20,272,220	987,513	60	1,253,789	10,112,108	309,516	96,998	7,512,236	4,743	11	62	47,365	24,678	5,677,623	397,607	6,075,230	7,396,211	40	7,396,251
Other Districts ...	5,933,720	571,841	43,290	729,205	4,210,070	356,081	...	23,233	2,188	2	2	16,716	14,567	1,601,360	202,834	1,804,194	20,618	43,290	63,908
Grand Total, 1918 ...	87,580,098	4,296,478	63,495	5,215,456	64,205,672	4,094,412	1,222,375	8,482,210	19,313	45	79	255,039	126,466	30,669,112	1,702,463	32,371,575	8,573,270	63,430	8,636,700
Grand Total, 1917 ...	105,384,029	5,229,742	199,995	5,510,956	77,570,946	3,899,866	2,892,670	10,079,854	19,404	47	83	303,133	96,375	36,854,031	2,076,659	38,930,690	10,973,576	168,538	11,142,114
Increase, 1918 ...	...	...	...	...	...	194,546	...	...	...	...	...	...	30,091	...	...	...	...	...	...
Decrease, 1918 ...	17,803,931	933,264	136,500	295,500	13,365,274	...	1,670,295	1,597,644	91	2	4	48,094	...	6,184,919	374,196	6,559,115	2,400,306	105,108	2,505,414

Table No. II.

RETURN showing the TOTAL EXTENT of LAND under CULTIVATION, and the AREA under each DESCRIPTION of CROP, in the several PETTY SESSIONS DISTRICTS of the STATE during the YEAR 1918.

DIVISIONS AND PETTY SESSIONS DISTRICTS.	Total Extent of Land under permanent Pasture with Artificially Sown Grasses.	Total Extent of Land under Cultivation.	Land in Fallow, Lying Idle, &c.	Total Extent of Land under Crop.	GRAIN CROPS.							POTATOES.		Pumpkins and Melons.	Cotton.	Sugar-cane.	Arrowroot.	Tobacco.	COFFEE.		Hay (All Kinds).	Green Fodder.	VINES.		Bananas.	Pineapples.	Oranges.	Gardens and Orchards.	Other Crops.
					Wheat.	Oats.	Barley.		Maize.	Rye.	Rice.	English.	Sweet.						Bearing.	Not Bearing.			Bearing.	Not Bearing.					
							Malting.	Other.																					
Moreton Division.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Brisbane (A.)	28	6,018	1,165	4,853	...	...	...	...	257	...	...	171	125	166	2	...	1	...	...	...	120	1,147	317	7	845	600	39	349	707
Brisbane (B.)	61	1,802	515	1,287	...	...	...	...	47	...	...	33	12	15	...	...	...	...	...	...	108	588	11	2	32	162	20	169	88
Beaudesert	6,212	6,264	2,060	4,204	...	...	...	...	1,813	...	...	52	16	41	...	...	...	...	...	...	676	1,552	2	...	5	...	9	30	8
Caboolture	2,086	739	184	555	...	...	...	...	99	...	...	38	15	1	...	...	1	...	...	...	2	117	3	...	95	117	35	31	1
Cleveland	5	2,294	487	1,807	...	...	...	...	5	...	...	8	9	12	2	...	...	1	...	...	...	94	3	...	181	908	51	295	238
Cooyar	...	1,501	968	533	...	...	...	...	343	...	...	52	...	...	...	...	...	...	...	...	103	35	...	...	...	...	...	...	...
Crow's Nest	2,165	9,621	3,436	6,185	41	4	...	5	4,651	...	...	205	4	6	...	...	...	...	...	...	569	656	1	...	...	...	8	32	3
Dugandan	3,292	17,710	4,415	13,295	...	...	...	...	8,474	...	...	264	19	247	5	...	...	...	...	...	2,110	2,090	3	...	6	2	4	6	65
Esk	1,967	10,543	3,964	6,579	..	...	...	...	2,077	...	...	78	87	113	2	...	...	...	...	...	1,311	2,795	3	...	42	3	41	25	2
Gatton	4,082	24,654	11,868	12,786	13	...	...	...	5,461	...	...	469	306	1,107	2	...	...	...	...	...	3,860	1,418	6	2	...	...	83	18	41
Goodna	...	207	1	206	...	...	...	...	94	...	...	20	...	2	...	...	...	...	...	...	45	38	3	...	...	...	1	...	3
Harrisville	248	12,760	3,802	8,958	...	15	...	...	3,857	...	...	48	52	245	...	...	...	...	...	...	3,145	1,550	2	...	6	...	11	22	5
Helidon	3,142	6,246	3,316	2,930	...	...	...	...	803	...	...	192	68	164	...	...	...	...	...	...	1,041	523	7	...	...	...	58	63	11
Ipswich	33	3,857	2,005	1,852	...	...	...	...	735	...	...	43	46	32	...	...	...	...	...	...	326	564	2	...	7	22	25	49	1
Kilcoy	1,410	1,910	601	1,309	...	...	...	...	643	...	...	58	25	15	...	...	...	...	...	...	194	310	2	1	6	...	3	45	7
Laidley	2	22,234	8,337	13,897	...	...	...	...	6,976	...	...	461	159	750	6	...	...	...	...	...	4,239	1,104	10	1	1	1	21	24	144
Logan	...	4,289	4	4,285	...	...	...	...	740	2	1	568	166	...	2	1,129	177	...	...	...	102	617	12	...	339	171	104	79	76
Lowood	500	10,630	2,896	7,734	...	...	...	...	4,938	...	...	299	175	239	6	...	4	5	..	...	604	1,303	72	6	2	8	22	37	14
Maroochy	42,197	7,424	368	7,056	...	...	...	...	407	...	...	25	9	4	...	1,582	4	...	12	1	21	377	3	...	2,086	1,128	1,292	93	12
Nerang	22,334	2,359	457	1,902	...	...	...	...	418	...	...	78	6	1	...	35	226	...	...	...	39	527	1	...	461	19	68	21	2
Redcliffe	1,068	3,255	436	2,819	...	...	...	...	473	...	...	115	166	14	...	...	...	...	...	...	173	1,038	7	...	662	50	28	65	28
Rosewood	82	9,132	2,863	6,269	...	2	...	...	1,778	...	...	46	33	69	...	15	3	...	...	...	1,332	2,989	...	...	...	1	...	...	1
Southport	308	494	171	323	...	...	...	...	36	...	...	11	1	...	...	139	...	...	...	...	11	119	...	...	1	2	...	2	1
Townshend	167	5,950	1,608	4,342	...	...	...	...	2,078	...	...	45	76	40	2	94	4	...	...	...	379	1,541	14	...	3	10	7	38	11
Woodford	9,693	793	358	435	...	...	...	...	172	...	...	8	14	.	...	...	1	...	...	...	10	72	1	...	92	12	16	29	8
Wynnum	5	715	180	535	...	...	...	...	9	...	...	12	28	15	...	...	...	...	...	...	20	78	16	2	11	135	4	174	31
Total Moreton	101,081	173,401	56,465	116,936	54	21	...	5	47,384	2	1	3,399	1,617	3,298	29	2,994	421	6	12	1	20,540	23,242	501	21	4,883	3,351	1,950	1,696	1,508
Wide Bay Division.																													
Biggenden	16,429	2,005	1,060	945	...	...	...	...	485	...	...	13	7	5	2	169	...	...	...	...	91	156	1	...	10	...	3	...	3
Bundaberg	359	26,561	7,098	19,463	...	...	...	...	712	...	...	90	7	7	...	17,352	...	...	...	...	298	582	9	3	111	48	65	163	16
Childers	830	14,278	2,023	12,255	...	...	...	...	145	...	...	3	1	1	...	11,658	...	...	...	...	37	322	1	...	9	20	39	15	4
Eidsvold	402	627	359	268	...	...	...	...	117	...	...	13	17	23	...	...	...	...	...	...	55	32	2	...	...	...	3	5	1
Gayndah	21,641	4,395	1,468	2,927	...	...	...	6	1,773	...	...	55	28	27	19	...	...	...	...	...	130	267	2	1	...	...	37	10	572
Gin Gin	1,103	8,205	3,070	5,135	...	...	...	...	596	...	...	30	4	22	...	4,093	...	...	...	...	210	138	4	...	...	4	16	7	11
Gympie	63,447	5,107	1,376	3,731	...	...	...	...	1,219	...	...	100	27	7	...	47	1	...	...	...	288	989	11	...	887	29	26	87	13
Kilkivan	1,360	1,647	800	847	...	...	...	...	302	...	...	32	...	25	...	...	...	...	...	...	101	349	1	...	...	...	3	34	...
Maryborough	393	6,693	2,237	4,456	...	...	...	...	147	...	...	142	27	5	...	2,177	...	...	4	...	508	291	24	3	460	150	457	48	13
Mount Perry	264	170	101	69	...	...	...	...	23	...	...	2	3	2	...	16	...	...	...	...	9	2	...	...	3	3	4	2	...
Nanango	29,957	30,918	14,714	16,204	310	93	10	...	11,609	...	...	191	6	14	...	...	...	...	...	...	1,604	2,256	7	1	...	...	21	73	9
Tiaro	3,571	4,806	2,263	2,543	...	...	...	...	393	...	...	69	3	3	1	1,451	1	...	...	...	147	211	...	...	123	67	57	15	2
Wienholt	48,360	30,396	14,158	16,238	10	14	...	...	11,931	...	...	390	43	214	5	...	...	...	...	...	1,567	1,967	2	1	...	1	16	41	46
Total Wide Bay	193,116	135,808	50,727	85,081	320	107	10	6	29,452	...	...	1,130	173	355	27	36,963	2	...	4	...	5,035	7,562	64	9	1,603	322	747	500	690
Port Curtis Division.																													
Banana	35	74	55	19	...	...	...	...	10	...	...	...	...	1	...	...	...	...	...	...	4	1	...	...	...	...	1	2	...
Gladstone	8,342	3,377	1,407	1,970	...	...	...	...	710	...	...	204	39	2	...	516	1	...	...	...	129	155	2	1	103	29	33	36	10
Mount Morgan	35	139	41	98	...	...	...	...	2	...	...	6	1	..	...	...	...	...	...	...	32	16	2	...	...	1	3	25	10
Rockhampton	21,337	9,011	4,570	4,441	...	...	...	...	2,115	...	...	178	89	73	34	...	...	...	...	...	821	446	20	1	112	93	162	197	100
St. Lawrence	139	138	72	66	...	...	...	...	8	...	...	12	...	1	...	14	...	...	...	...	2	...	...	...	7	2	1	17	2
Total Port Curtis	29,888	12,739	6,145	6,594	...	...	...	...	2,845	...	...	400	129	77	34	530	1	...	...	...	988	618	24	2	222	125	200	277	122

Table No. II.—*continued.*

DIVISIONS AND PETTY SESSIONS DISTRICTS.	Total Extent of Land under permanent Pasture with Artificially Sown Grasses.	Total Extent of Land under Cultivation.	Land in Fallow, Lying Idle, &c.	Total Extent of Land under Crop.	GRAIN CROPS.							POTATOES.		Pumpkins and Melons.	Cotton.	Sugar-cane.	Arrowroot.	Tobacco.	COFFEE.		Hay (All Kinds).	Green Fodder.	VINES.		Bananas.	Pineapples.	Oranges.	Gardens and Orchards.	Other Crops.
					Wheat.	Oats.	Barley.		Maize.	Rye.	Rice.	English.	Sweet.						Bearing.	Not Bearing.			Bearing.	Not Bearing.					
							Malting.	Other.																					
Edgecumbe Division.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Ayr	1	29,860	8,130	21,730	...	...	...	...	69	...	...	49	3	1	1	21,417	...	...	...	...	...	67	...	...	97	1	12	11	2
Bowen	8	2,246	953	1,293	...	...	...	...	38	...	...	126	11	90	...	281	...	12	...	...	...	56	...	...	36	27	181	47	388
Cape River	...	79	...	79	...	...	...	...	...	...	...	6	2	4	...	...	...	...	...	...	...	1	1	...	...	...	9	54	2
Charters Towers ...	1	198	29	169	...	...	...	...	...	...	...	1	2	7	...	...	...	...	...	...	...	40	7	1	...	1	30	78	2
Mackay	...	54,201	18,217	35,984	...	...	...	...	34	...	...	71	6	1	...	35,426	...	...	8	...	1	296	15	...	40	12	23	42	3
Proserpine	30	7,385	3,331	4,054	...	...	...	...	15	...	...	16	1	7	...	3,853	...	12	...	1	...	5	...	...	84	2	28	28	2
Ravenswood	...	6	...	6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	2	2
Townsville	...	2,377	598	1,779	...	...	...	...	27	...	...	173	16	54	...	1,126	...	10	...	...	6	29	...	...	186	23	12	56	61
Total Edgecumbe ...	40	96,352	31,258	65,094	...	...	...	...	183	...	...	442	41	164	1	62,103	...	34	8	1	7	494	24	1	443	66	302	318	462
Rockingham Division.																													
Cairns	801	24,089	3,677	20,412	...	...	...	...	56	...	...	27	11	7	...	19,376	...	...	...	...	...	31	...	...	430	138	229	101	6
Cardwell	...	170	10	160	...	...	...	...	7	...	...	...	13	...	...	...	...	1	...	...	...	1	...	...	1	1	96	28	12
Chillagoe	...	80	12	68	...	...	...	...	7	...	...	2	6	3	...	...	...	...	...	...	...	...	...	...	6	1	3	32	8
Herberton	34,751	16,475	2,267	14,208	...	...	...	...	13,654	...	43	92	36	10	...	...	...	...	3	...	70	107	3	2	24	6	34	63	61
Ingham	...	22,899	4,567	18,332	...	...	...	...	3	...	...	...	2	...	...	18,173	...	...	...	...	...	81	...	...	2	1	24	46	...
Mourilyan	...	20,305	4,003	16,302	...	...	...	...	2	...	...	1	2	...	...	16,174	...	...	...	...	...	17	...	...	41	4	18	24	19
Total Rockingham ...	35,552	84,018	14,536	69,482	...	...	...	...	13,729	...	43	122	70	20	...	53,723	...	1	3	...	70	237	3	2	504	151	404	294	106
York Peninsula Division.																													
Coen	...	23	8	15	...	...	...	...	...	...	...	...	6	1	...	...	...	...	...	...	...	...	...	...	3	1	...	1	3
Cook	...	569	152	417	...	...	...	...	94	...	...	...	33	9	...	...	...	...	...	...	...	2	...	...	34	6	69	56	114
Douglas	...	6,165	1,848	4,317	...	...	...	...	2	...	...	...	2	1	...	4,221	...	...	...	...	...	2	...	...	5	1	35	31	17
Palmer	...	5	1	4	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...
Somerset	...	1,603	331	1,272	...	...	...	...	12	...	...	...	32	11	...	...	...	...	...	...	...	12	...	...	111	3	...	20	1,071
Total York Peninsula	...	8,365	2,340	6,025	...	...	...	...	108	...	...	...	74	22	...	4,221	...	...	...	...	...	16	...	...	153	11	104	111	1,205
Carpentaria Division.																													
Burke	...	10	...	10	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	1	5	2
Cloncurry	...	76	8	68	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	1	...	...	3	24	38
Croydon	...	86	16	70	...	...	...	...	...	...	...	2	6	3	...	...	...	...	...	...	...	...	...	...	7	...	2	44	6
Etheridge	...	184	83	101	...	...	...	...	62	...	...	1	1	1	...	...	...	...	...	...	...	11	...	...	2	...	...	21	2
Hughenden	...	62	1	61	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	61	...
Norman	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Richmond	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
Total Carpentaria ...	...	419	108	311	...	...	...	...	62	...	...	3	8	6	...	...	...	...	...	...	...	11	1	1	9	...	6	156	48
Central-western Division.																													
Boulia	...	16	...	16	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	16	...
Camooweal	...	10	...	10	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	10	...
Diamantina	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Isisford	...	12	...	12	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	12	...
Jundah	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Windorah	...	7	7	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Winton	...	19	2	17	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	17	...
Total Central-western	...	64	9	55	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	55	...

Table No. II.—*continued.*

DIVISIONS AND PETTY SESSIONS DISTRICTS.	Total Extent of Land under Permanent Pasture with Artificially Sown Grasses.	Total Extent of Land under Cultivation.	Land in Fallow, Lying Idle, &c.	Total Extent of Land under Crop.	GRAIN CROPS.							POTATOES.		Pumpkins and Melons.	Cotton.	Sugar-cane.	Arrowroot.	Tobacco.	COFFEE.		Hay (All Kinds).	Green Fodder.	VINES.		Bananas.	Pineapples.	Oranges.	Gardens and Orchards.	Other Crops.
					Wheat.	Oats.	Barley.		Maize.	Rye.	Rice.	English.	Sweet.						Bearing.	Not Bearing.			Bearing.	Not Bearing.					
							Malting.	Other.																					
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
South-western Division.																													
Adavale	...	5	...	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5	...
Augathella	...	17	7	10	...	...	...	...	...	...	...	2	...	1	...	...	...	...	...	...	...	...	1	...	...	...	2	2	2
Bollon	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Charleville	...	28	15	13	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	3	8	...
Cunnamulla	...	470	365	105	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	90	...	...	...	...	...	...	15	...
Eulo	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Hungerford	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
St. George	...	152	67	85	...	...	...	...	14	...	...	8	...	5	...	...	...	...	...	...	29	...	2	1	...	...	4	15	7
Thargomindah	...	20	11	9	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	4	1
Total South-western	...	693	465	228	...	...	...	...	14	...	...	11	...	6	...	...	...	...	...	...	119	...	5	1	...	...	12	50	10
Central Division.																													
Alpha	...	24	21	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	1	...
Aramac	...	3	...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	2	...
Barcaldine	...	20	10	10	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	9	...
Blackall	...	17	1	16	...	...	...	...	...	...	...	3	1	1	...	...	...	...	...	...	...	...	...	...	...	...	1	9	1
Clermont	...	61	32	29	...	...	...	...	...	...	...	...	8	...	5	...	...	...	...	...	7	...	...	...	...	...	6	3	...
Emerald	...	223	37	186	104	...	...	...	14	...	...	...	2	...	12	...	...	...	...	...	20	2	2	...	...	...	10	18	2
Longreach	...	21	...	21	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	21	...
Muttaburra	...	22	10	12	...	...	...	...	...	...	...	6	1	1	...	...	...	...	...	...	...	...	...	...	...	...	1	1	2
Springsure	...	552	323	229	...	...	...	...	15	...	...	...	...	...	...	...	...	...	...	...	206	6	...	...	...	...	...	2	...
Tambo	...	9	...	9	...	...	...	...	...	...	...	4	1	1	...	...	...	...	...	...	...	...	...	...	...	...	2	...	1
Taroom	...	267	84	183	2	...	...	...	63	...	...	3	2	5	14	...	...	...	...	...	50	24	4	...	...	...	6	10	...
Total Central	...	1,219	518	701	106	...	...	...	92	...	...	16	15	8	31	...	...	...	...	...	283	32	8	...	...	...	28	76	6
Maranoa Division.																													
Mitchell	...	4,287	3,190	1,097	523	...	...	...	53	...	...	1	...	4	2	...	...	...	...	...	36	463	1	...	...	...	3	11	...
Roma	...	24,078	11,697	12,381	6,857	...	...	...	251	...	...	10	4	36	32	...	...	...	...	...	613	4,135	339	23	...	...	40	39	2
Surat	...	11	6	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	4	...
Yeulba	...	783	773	10	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...	...	...	1	4	1
Total Maranoa	...	29,159	15,666	13,493	7,380	...	...	...	305	...	...	11	4	40	34	...	...	...	...	...	649	4,598	344	23	...	...	44	58	3
Downs Division.																													
Allora	...	36,767	19,217	17,550	2,210	17	25	52	7,706	...	...	49	...	...	...	...	...	...	...	...	2,488	4,981	2	...	...	...	17	2	1
Clifton	...	82,273	50,862	31,411	1,276	15	507	4	9,488	...	...	5	...	11	11	...	...	...	...	...	5,778	12,962	6	...	...	...	2	21	1,325
Condamine	2,477	5,534	5,144	390	20	...	...	...	87	...	...	...	...	...	24	...	...	...	...	...	110	149	...	...	...	...	...	...	...
Dalby	36,304	32,500	29,709	2,791	601	10	...	...	943	...	...	16	...	15	10	...	...	...	...	...	320	802	7	2	...	...	12	23	30
Goombungee	...	8,841	5,905	2,936	...	...	...	...	2,117	...	...	9	...	...	...	...	...	...	...	...	73	728	3	...	...	...	1	5	...
Goondiwindi	7,153	5,299	4,962	337	197	...	...	...	64	...	...	1	...	2	...	...	...	...	...	...	56	11	...	...	...	...	...	3	3
Highfields	199	8,179	4,100	4,079	9	...	...	...	2,499	...	...	147	...	14	...	...	...	...	...	...	873	514	5	...	...	...	8	8	2
Inglewood	35	6,457	5,229	1,228	616	...	...	...	91	...	...	2	...	33	...	...	...	76	...	...	309	36	2	2	...	...	2	30	29
Jondaryan	58	15,356	11,379	3,977	116	...	...	...	1,876	...	...	25	...	86	...	...	...	...	...	...	210	1,647	5	1	...	...	2	9	...
Killarney	1,035	22,260	7,875	14,385	1,934	5	15	59	5,764	...	...	98	...	1	...	...	...	...	...	...	1,102	5,287	2	...	...	...	1	40	77
Oakey	37	43,149	29,868	13,281	143	20	40	...	6,052	...	...	102	...	91	...	...	...	...	...	...	3,275	3,498	6	2	...	...	9	41	2
Pittsworth	10,023	65,976	53,742	12,234	493	28	222	...	3,798	...	...	18	1	113	...	...	...	...	...	...	3,733	3,816	2	...	...	...	1	5	4
Stantborpe	...	6,687	322	6,365	...	...	...	...	54	...	...	192	...	32	...	...	...	...	...	...	82	211	94	44	...	...	...	5,049	607
Texas	2	1,014	553	461	30	...	...	...	11	...	...	...	...	16	...	...	...	96	...	...	32	269	1	...	...	...	...	5	1
Toowoomba	15	29,630	17,565	12,065	305	42	120	...	2,491	...	...	38	...	4	...	...	...	...	...	...	2,994	5,589	34	...	...	...	47	379	22
Warwick	1,146	69,907	31,880	38,027	5,827	33	143	108	12,290	...	...	198	...	189	2	...	...	...	...	...	5,646	13,325	32	1	...	...	2	35	196
Total Downs	58,501	439,829	278,312	161,517	13,777	170	1,072	223	55,331	...	...	900	1	607	47	...	...	172	...	...	27,081	53,825	201	52	...	...	104	5,655	2,299
Grand Total 1918	418,467	982,066	456,549	525,517	21,637	298	1,082	234	149,505	2	44	6,434	2,132	4,603	203	160,534	421	213	27	2	54,772	90,635	1,175	112	7,817	4,026	3,901	9,246	6,459
„ 1917	406,094	998,036	270,078	727,958	127,815	3,002	5,813	1,889	165,124	43	6	10,738	2,227	8,508	133	175,762	368	289	50	1	96,431	87,909	1,140	134	9,141	4,166	4,301	9,465	13,503
Increase, 1918	12,373	...	186,471	...	...	...	...	...	...	...	38	...	...	...	70	...	56	...	...	1	...	2,726	35	...	...	...	...	...	...
Decrease, 1918	...	15,970	...	202,441	106,178	2,704	4,731	1,655	15,619	41	...	4,304	95	3,905	...	15,228	...	76	23	...	41,659	...	...	22	1,324	140	400	219	7,044

Table No. III.

RETURN showing the GROSS PRODUCE of PRINCIPAL CROPS Raised in the several PETTY SESSIONS DISTRICTS of the STATE during the YEAR ended 31st DECEMBER, 1918.

DIVISIONS AND PETTY SESSIONS DISTRICTS.	QUANTITY OF PRODUCE.																			
	GRAIN CROPS.							POTATOES.		Pumpkins and Melons.	Cotton.	SUGAR-CANE.		Arrowroot (Tubers).	Tobacco (Cured Leaf).	Coffee.	Hay (All Kinds).	VINES.	Bananas.	Pineapples.	Oranges.
	Wheat.	Oats.	Barley.		Maize.	Rye.	Rice.	English.	Sweet.			Area Crushed.	Weight Obtained.					Grapes Gathered.			
			Malting.	Other.																
Moreton Division.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Tons.	Tons.	Tons.	Lb.	Acres.	Tons.	Tons.	Lb.	Lb.	Tons.	Lb.	Bunches.	Dozens.	Bushels.
Brisbane (A)	...	...	...	...	6,976	...	...	248	557	478	350	...	...	2	...	...	321	510,587	156,842	229,271	3,136
Brisbane (B)	...	...	...	...	1,125	...	...	65	44	79	...	...	...	...	...	...	257	15,114	3,435	29,210	855
Beaudesert	...	...	...	...	40,338	...	...	65	38	138	...	...	...	...	...	...	1,686	5,043	2,400	...	946
Caboolture	...	...	...	...	3,205	...	...	86	78	2	...	...	...	10	...	...	4	6,162	20,730	22,479	2,153
Cleveland	...	...	...	...	60	...	...	38	25	33	509	...	...	...	512	...	...	14,240	33,208	175,111	3,444
Cooyar	...	...	...	...	8,437	...	...	122	...	...	...	...	...	...	...	...	429	...	...	...	...
Crow's Nest	...	510	39	...	60 115,697	...	...	357	20	2	...	...	...	...	...	...	1,237	8,468	...	...	735
Dugandan	...	...	...	...	...	209,563	...	...	412	81	7·7	1,478	...	...	...	...	...	5,001	26,912	1,056	40
Esk	...	...	...	...	...	47,536	...	...	187	530	771	3.436	...	...	...	...	...	4,235	9,404	6,550	32
Gatton	...	148	...	...	...	153.675	...	...	554	1,392	2,352	2,885	...	...	...	...	...	7,755	8,765	...	...
Goodna	...	...	...	...	...	2,206	...	...	10	...	7	...	...	...	...	...	...	132	4,376	...	...
Harrisville	...	...	50	...	...	89,929	...	...	67	194	806	...	...	...	...	...	...	5,881	3,337	...	...
Helidon	...	...	...	...	...	19,297	...	...	232	403	401	...	...	...	...	...	...	1,762	2,702	...	...
Ipswich	...	...	...	...	...	19,145	...	...	82	188	128	...	...	...	...	...	...	628	705	1,029	3,415
Kilcoy	...	...	...	...	...	21,411	...	...	103	176	83	...	...	...	...	...	...	768	7,190	280	...
Laidley	...	...	...	...	...	219,726	...	...	527	649	689	4,051	...	...	...	...	...	9,276	17,167	160	34
Logan	...	...	...	...	...	14,093	20	12	1,012	509	...	600	717	11,707	1,672	...	...	323	30,656	78,965	44,761
Lowood	...	...	...	...	...	137,205	...	...	303	882	842	4,678	...	...	15	5,598	...	1,360	114,162	6	1,480
Maroochy	...	...	...	...	...	10,174	...	...	46	80	7	...	713	13,797	68	...	5,369	49	9,906	305,771	211,978
Nerang	...	...	...	...	...	9,975	...	...	131	27	4	...	35	170	3,710	...	...	62	3,396	65,112	837
Redcliffe	...	...	...	...	...	13,828	...	...	183	1,910	130	...	...	...	...	...	...	562	16,062	161,606	13,314
Rosewood	...	...	4	...	...	33,420	...	...	60	111	240	...	13	225	27	...	...	3,574	...	...	52
Southport	...	...	...	...	...	705	...	...	23	1	..	...	139	634	...	...	...	13	...	40	...
Townshend	...	...	...	...	...	49,376	...	...	65	451	164	1,044	81	1,351	20	...	...	968	8,200	189	854
Woodford	...	...	...	...	...	4,763	...	...	12	95	...	...	...	...	1	...	...	12	4,310	17,112	4,470
Wynnum	...	...	...	...	...	192	...	...	22	276	47	...	...	...	...	...	...	38	94,020	2,500	20,041
Total Moreton	...	658	93	...	60	1,232,057	20	12	5,012	8,717	8,110	19,031	1,698	27,884	5,525	6,110	5,369	46 333	920,884	856,991	757,379
Wide Bay Division.																					
Biggenden	...	...	...	...	...	13,322	...	...	23	20	16	700	142	1,649	...	...	...	157	1,650	3,600	...
Bundaberg	...	...	...	...	...	12,631	...	...	129	30	59	...	13,382	216,053	...	...	...	853	10,615	17,802	6,953
Childers	...	...	...	...	...	2,427	...	...	4	3	2	...	7,957	209,558	...	...	...	111	1,250	623	750
Eidsvold	...	...	...	...	...	1,907	...	...	17	79	22	...	...	...	...	...	...	96	3,130	...	...
Gayndah	...	...	...	...	18	31,441	...	...	89	200	113	6,528	...	...	...	...	...	184	13,950	...	...
Gin Gin	...	...	...	...	...	12,444	...	...	60	10	40	...	2,912	37,721	...	...	...	603	9,982	...	395
Gympie	...	...	...	...	...	41,670	...	...	191	139	14	...	21	326	1	...	...	674	27,742	163,155	2,730
Kilkivan	...	...	...	...	...	7,309	...	...	47	...	124	...	...	...	...	...	...	287	1,500	...	...
Maryborough	...	...	...	...	...	2,457	...	...	172	78	14	...	1,561	20,543	...	...	3,000	757	40,102	81,115	29,968
Mount Perry	...	...	...	...	...	565	...	...	2	13	4	...	16	346	...	...	...	16	...	350	140
Nanango	...	1,745	790	30	...	355,329	...	...	289	20	64	...	...	...	...	...	...	2,901	16,550	...	...
Tiaro	...	...	...	...	...	12,334	...	...	92	17	12	200	1,071	15,357	2	...	...	367	...	20,318	11,446
Wienholt	...	210	125	...	...	387,129	...	...	573	199	881	2,733	...	...	...	...	...	3,632	17,953	...	200
Total Wide Bay	...	1,955	915	30	18	880,965	...	...	1,688	808	1,365	10,161	27,062	501,553	3	...	3,000	10,638	144,424	286,963	52,582
Port Curtis Division.																					
Banana	...	...	...	...	...	70	...	...	...	...	1	...	...	...	...	...	...	2	...	...	...
Gladstone	...	...	...	...	...	15,872	...	...	356	106	3	...	424	5,322	1	...	...	323	1,981	10,853	3,626
Mount Morgan	...	...	...	...	...	50	...	...	8	1	...	...	...	...	...	...	...	34	1,520	...	70
Rockhampton	...	...	...	...	...	34,567	...	...	255	186	201	19,149	...	...	...	...	...	1,489	26,260	13,587	16,196
St. Lawrence	...	...	...	...	...	189	...	...	28	...	4	...	9	53	...	...	...	7	...	100	210
Total Port Curtis	...	...	...	...	..	50,748	...	...	647	293	209	19,149	433	5.375	1	...	...	1,855	29,761	24.540	20,102

Table No. III.—*continued.*

DIVISIONS AND PETTY SESSIONS DISTRICTS.	QUANTITY OF PRODUCE.																			
	GRAIN CROPS.							POTATOES.		Pumpkins and Melons.	Cotton.	SUGAR-CANE.		Arrowroot (Tubers).	Tobacco (Cured Leaf).	Coffee.	Hay (All Kinds).	VINES.	Bananas.	Pineapples.	Oranges.
	Wheat.	Oats.	Barley.		Maize.	Rye.	Rice.	English.	Sweet.			Area Crushed.	Weight Obtained.					Grapes Gathered.			
			Malting.	Other.																	
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Tons.	Tons.	Tons.	Lb.	Acres.	Tons.	Tons.	Lb.	Lb.	Tons.	Lb.	Bunches.	Dozens.	Bushels.
Edgecumbe Division.																					
Ayr	...	...	...	...	1,367	...	...	100	10	2	1,990	16,933	357,126	...	...	...	...	...	10,160	60	511
Bowen	...	...	...	...	782	...	...	233	25	133	...	265	1,247	...	10,615	...	...	...	2,115	3,515	6,140
Cape River	...	...	...	...	...	...	...	8	2	21	...	...	...	...	...	...	...	304	...	...	975
Charters Towers	...	...	...	...	...	...	...	2	4	9	...	...	...	...	...	...	...	22,293	...	100	3,674
Mackay	...	...	...	...	664	...	...	150	12	1	...	22,838	203,159	...	...	1,400	1	14,415	4,581	562	1,283
Proserpine	...	...	...	...	140	...	...	20	2	13	...	2,407	23,553	...	9,888	...	...	...	2,274	109	2,350
Ravenswood	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2,100	...	...	139
Townsville	...	...	...	...	1,086	...	...	575	52	120	...	921	17,062	...	5,036	...	9	...	30,700	3,832	197
Total Edgecumbe	...	...	...	...	4,039	...	...	1,088	107	299	1,990	43,364	602,147	...	25,539	1,400	10	39,112	49,830	8,178	15,269
Rockingham Division.																					
Cairns	...	...	...	...	1,126	...	...	61	75	19	...	13,578	218,163	...	...	...	...	...	21,756	18,090	32,021
Cardwell	...	...	...	...	110	...	...	...	38	...	...	...	...	...	150	...	...	...	412	88	1,366
Chillagoe	...	...	...	...	220	...	...	2	19	5	...	...	...	...	...	...	...	...	1,412	29	259
Herberton	...	...	...	...	412,630	...	1,068	113	200	22	...	...	...	...	...	3,360	73	9,151	3,013	499	2,460
Ingham	...	...	...	...	40	...	...	...	3	...	...	11,566	153,821	...	...	...	...	...	300	52	4,799
Mourilyan	...	...	...	...	0	...	...	1	7	...	...	10,526	116,795	...	...	...	...	...	2,176	255	52
Total Rockingham	...	...	...	...	414,206	...	1,068	177	342	46	...	35,670	488,779	...	150	3,360	73	9,151	29,069	19,013	40,957
York Peninsula Division.																					
Coen	...	...	...	...	...	...	...	...	14	2	...	...	...	...	...	...	...	...	286	16	...
Cook	...	...	...	...	2,196	...	...	...	92	24	...	...	...	...	...	...	...	...	5,712	2,104	4,528
Douglas	...	...	...	...	8	...	...	...	4	2	...	3,345	49,091	...	...	...	...	...	944	156	1,470
Palmer	...	...	...	...	...	...	...	...	3	...	...	...	...	...	...	...	...	...	...	...	...
Somerset	...	...	...	...	130	...	...	...	94	27	...	...	...	...	...	...	...	...	11,786	418	...
Total York Peninsula	...	...	...	...	2,334	...	...	...	207	55	...	3,345	49,091	...	...	...	...	...	18,728	2,694	5,998
Carpentaria Division.																					
Burke	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	50
Cloncurry	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	1,640	...	...	104
Croydon	...	...	...	...	...	...	...	2	7	3	...	...	...	...	...	...	...	...	310	...	226
Etheridge	...	...	...	...	760	...	...	1	2	2	...	...	...	...	...	...	...	...	210	...	...
Hughenden	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Norman	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Richmond	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total Carpentaria	...	...	...	...	760	...	...	3	10	8	...	...	...	...	...	...	...	1,640	520	...	380
Central-western Division.																					
Boulia	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Camooweal	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Diamantina	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Isisford	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Jundah	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Windorah	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Winton	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total Central-western	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

Table No. III.—*continued.*

DIVISIONS AND PETTY SESSIONS DISTRICTS.	QUANTITY OF PRODUCE.																				
	GRAIN CROPS.							POTATOES.		Pumpkins and Melons.	Cotton.	SUGAR-CANE.		Arrowroot (Tubers).	Tobacco (Cured Leaf).	Coffee.	Hay (All Kinds).	VINES.	Bananas.	Pineapples.	Oranges.
	Wheat.	Oats.	Barley.		Maize.	Rye.	Rice.	English.	Sweet.			Area Crushed.	Weight Obtained.					Grapes Gathered.			
			Malting.	Other.																	
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Tons.	Tons.	Tons.	Lb.	Acres.	Tons.	Tons.	Lb.	Lb.	Tons.	Lb.	Bunches.	Dozens.	Bushels.
South-western Division.																					
Adavale	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Augathella	...	...	...	...	...	...	...	5	...	3	...	...	...	...	...	...	...	1,770	...	...	54
Bollon	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Charleville	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	7,000	...	...	135
Cunnamulla	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	60	...	...	...	...
Eulo	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Hungerford	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
St. George	...	...	...	...	132	...	...	13	...	5	...	...	...	...	...	...	16	8,676	...	...	59
Thargomindah	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	120
Total South-western	...	...	...	...	132	...	...	20	...	8	...	...	...	...	...	...	76	17,446	...	...	368
Central Division.																					
Alpha	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	6,000	...	...	...
Aramac	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	12
Barcaldine	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	150
Blackall	...	...	...	...	...	...	...	8	2	2	...	...	...	...	...	...	...	...	...	...	246
Clermont	...	...	...	...	...	...	...	...	9	...	5,299	...	...	...	...	...	8	...	...	...	802
Emerald	...	...	252	...	...	...	24	...	7	...	5,463	...	...	...	...	...	24	1,090	...	...	1,240
Longreach	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Muttaburra	...	...	...	...	...	...	...	9	2	2	...	...	...	...	...	...	...	...	...	...	60
Springsure	...	...	...	...	300	...	...	...	...	...	...	...	...	...	...	...	80	...	...	...	...
Tambo	...	...	...	...	...	...	...	11	2	1	...	...	...	...	...	...	...	...	...	...	160
Taroom	...	...	24	...	1,286	...	...	6	8	7	8,806	...	...	...	...	...	110	7,695	...	...	119
Total Central	...	...	276	...	...	...	1,610	...	...	34	30	12	19,568	...	...	...	...	...	222	14,785	...	...	2,789
Maranoa Division.																					
Mitchell	...	...	2,340	...	...	...	460	...	...	1	...	9	1,700	...	...	...	...	...	35	2,844	...	...	118
Roma	...	...	29,562	...	...	...	2,848	...	...	16	7	73	15,048	...	...	...	...	...	386	190,751	...	...	1,368
Surat	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1,120	...	...	...
Yeulba	...	...	...	...	...	...	20	...	...	...	...	...	...	...	...	...	...	...	...	1,456	...	...	120
Total Maranoa	...	...	31,902	...	...	...	3,328	...	...	17	7	82	16,748	...	...	...	...	...	421	196,171	...	...	1,606
Downs Division.																					
Allora	...	...	13,379	290	243	561	208,786	...	...	238	...	...	...	...	...	...	...	...	3,035	4,092	...	...	...
Clifton	...	...	6,215	450	3,944	60	248,639	...	...	10	...	16	3,360	...	...	...	...	...	5,641	8,450	...	...	13
Condamine	...	...	60	...	...	...	1,634	...	...	...	...	...	7,900	...	...	...	...	...	25	...	...	...	...
Dalby	...	...	1,303	20	...	...	18,395	...	...	38	...	14	3,300	...	...	...	...	...	460	17,126	...	...	611
Goombungee	...	...	...	...	...	...	55,652	...	...	11	...	...	...	...	...	...	...	...	123	16,700	...	...	58
Goondiwindi	...	...	870	...	...	...	1,105	...	...	1	...	1	...	...	...	...	...	...	18	...	...	...	...
Highfields	...	...	52	...	...	...	60,386	...	...	373	...	121	...	...	...	...	...	...	1,455	24,242	...	...	1,381
Inglewood	...	...	1,410	...	...	...	1,491	...	...	7	...	141	...	...	...	...	...	42,179	393	3,210	...	...	...
Jondaryan	...	...	465	...	...	...	34.895	...	...	52	...	121	...	...	...	...	...	...	489	9,172	...	...	15
Killarney	...	...	5,939	150	40	300	175,745	...	...	372	...	2	...	...	...	...	...	...	2,246	7,720	...	...	24
Oakey	...	...	509	60	304	...	178,251	...	...	204	...	433	...	...	...	...	...	...	4,236	17,516	...	...	212
Pittsworth	...	...	1,772	490	1,192	...	84,677	...	...	36	10	200	...	...	...	...	...	...	3,262	3,936	...	...	128
Stanthorpe	...	...	...	...	...	...	1,088	...	...	313	...	61	...	...	...	...	...	...	104	147,395	...	...	...
Texas	...	...	24	...	...	...	117	...	...	...	...	26	...	...	...	...	...	39,164	94	615	...	...	...
Toowoomba	...	...	1,183	434	852	...	57,313	...	...	63	...	4	...	...	...	...	...	...	3,432	44,544	...	...	2,256
Warwick	...	...	36,537	730	464	756	387,621	...	...	679	...	294	238	...	...	...	...	...	7,589	46,989	...	...	8
Total Downs	...	...	69,718	2,624	7,039	1,677	1,515,795	...	...	2,397	10	1,434	14,798	...	...	...	...	81,343	32,602	351,707	...	...	4,706
Grand Total, 1918	...		104,509	3,632	7,069	1,755	4,105,974	20	1,080	11,083	10,531	11,628	101,445	111,572	1,674,829	5,529	113,142	13,129	92,230	1,725,081	1,267,641	859,948	313,237
,, 1917	...		1,035,268	44,688	108,518	35,056	4,188,586	595	210	22,139	10,725	28,628	76,656	108,707	2,704,211	4,019	107,576	16,242	153,895	1,838,511	1,356,837	944,282	400,999
Increase, 1918	...		...	...	...	...	...	...	870	...	...	...	24,789	2,865	...	1,510	5,566	...	...	...	...	...	...
Decrease, 1918	...		930,759	41,056	101,449	33,301	82,612	575	...	11,056	194	17,000	...	...	1,029,382	...	...	3,113	61,665	113,430	89,196	84,334	87,762

Table No. IV.

SHOWING the TOTAL EXTENT of LAND under CULTIVATION and the AREA under each DESCRIPTION of CROP in QUEENSLAND—RETURN for TEN YEARS.

Year.	Total Extent of Land under Cultivation.	Land in Fallow Lying Idle, &c.	Total Extent of Land under Crop.	AREA UNDER EACH DESCRIPTION OF CROP.																																
				GRAIN CROPS.							POTATOES.		Pumpkins and Melons.	Cotton.	SUGAR-CANE.		Arrowroot	Tobacco	COFFEE.		Hay (all Kinds)	Lucerne and Green Forage.	VINES.		Bananas.	Pineapples.	ORANGES.		MANGOES.		Strawberries.	APPLES.		Other Crops.	Market Gardens.	Other Gardens and Orchards.
				Wheat.	Oats.	Barley. Malting.	Barley. Other.	Maize.	Rye.	Rice.	English.	Sweet.			Area Crushed.	Total Area.			Bearing.	Total Area.			Bearing.	Total Area.			Bearing.	Total Area.	Bearing.	Total Area.		Bearing.	Total Area.			
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1909	738,447	131,657	606,790	117,160	2,789	7,439	5,670	132,313	171	...	7,708	2,998	4,856	509	80,095	128,178	241	594	194	235	72,298	100,493	1,617	1,695	4,994	2,161	2,131	3,298	299	363	150	494	813	3,406	2,677	3,581
1910	794,826	127,713	667,113	106,718	2,537	3,222	2,356	180,862	105	2	8,326	3,661	4,160	460	94,641	141,779	366	655	175	200	98,558	89,667	1,528	1,634	5,198	2,170	2,291	3,401	250	332	144	503	934	4,375	2,317	2,974
1911	779,800	253,412	526,388	42,962	557	1,216	418	153,916	19	15	7,688	3,312	5,421	605	95,766	130,376	369	592	182	198	61,299	93,049	1,292	1,371	6,456	2,414	2,361	3,447	309	366	121	587	1,236	3,895	2,293	2,777
1912	844,420	175,937	668,483	124,963	4,232	7,400	2,047	117,993	103	1	8,822	2,853	6,122	441	78,142	141,652	363	692	187	196	87,643	135,354	1,325	1,428	7,037	2,584	2,396	3,564	306	371	107	627	1,345	5,236	2,386	3,548
1913	920,010	172,196	747,814	132,655	4,093	6,274	2,552	156,775	91	5	10,085	3,224	6,556	214	102,803	147,743	374	731	161	165	76,469	171,290	1,449	1,537	7,400	3,014	2,407	3,590	353	404	96	835	1,608	4,298	2,611	3,960
1914	981,218	188,650	792,568	127,015	2,728	5,367	1,799	176,372	81	3	8,285	2,978	9,823	134	108,013	161,195	315	614	149	150	79,327	184,239	1,280	1,415	7,796	3,423	2,417	3,851	307	362	106	925	2,020	5,768	2,648	4,654
1915	1,059,401	229,813	729,588	93,703	339	945	422	146,474	26	1	5,796	1,702	4,359	72	94,459	153,027	284	469	91	93	55,174	236,293	1,225	1,373	8,168	3,709	2,272	3,837	295	337	90	995	2,179	4,090	2,330	4,298
1916	1,077,332	192,073	885,241	227,778	6,564	8,578	4,096	181,405	131	...	8,908	1,581	12,566	75	75,914	167,221	324	317	79	103	112,964	116,449	1,123	1,256	9,300	4,136	2,420	4,142	278	344	106	1,287	2,286	7,345	2,305	4,979
1917	998,036	270,078	727,958	127,815	3,002	5,813	1,889	165,124	43	6	10,738	2,227	8,508	133	108,707	175,762	368	289	50	51	96,431	87,909	1,140	1,274	9,141	4,166	2,746	4,301	290	352	88	1,343	2,363	13,503	1,991	4,671
1918	982,066	456,549	525,517	21,637	298	1,082	234	149,505	2	44	6,434	2,132	4,603	203	111,572	160,534	424	213	27	29	54,772	90,635	1,175	1,287	7,817	4,026	2,611	3,901	282	323	68	1,718	2,494	6,459	1,814	4,547

Table No. V

SHOWING the GROSS PRODUCE of PRINCIPAL CROPS Raised in QUEENSLAND—RETURN for TEN YEARS.

Year.	QUANTITY OF PRODUCE.																																		
	GRAIN CROPS.							POTATOES.		Pumpkins and Melons.	Cotton Unginned.	SUGAR-CANE.		Arrowroot (Tubers).	Tobacco (Cured Leaf).	Coffee.	Hay (all Kinds).	Ensilage.	VINES.		Bananas.	Pineapples.	Oranges.	Mangoes.	Strawberries.	Apples.	Market Gardens.	Other Gardens and Orchards.							
	Wheat.	Oats.	Barley. Malting.	Barley. Other.	Maize.	Rye.	Rice.	English.	Sweet.			Weight of Cane.	Sugar made at 94 % Net Titre.						Grapes.	Wine.															
	Bshls.	Bshls.	Bshls.	Bshls.	Bshls.	Bshls.	Bshls.	Tons.	Tons.	Tons.	Lb.	Tons.	Tons.	Tons.	Lb.	Lb.	Tons.	Tons.	Lb.	Gallons.	Bunches.	Dozens.	Bushels.	Bushels.	Quarts.	Bushels.	£	£							
1909	1,571,589	50,018	103,575	90,011	2,508,761	2,457	...	13,544	13,032	13,819	129,245	‡1,163,569	134,584	1,555	449,761	89,070	96,854	4,517	4,879,990	91,410	1,396,567	712,474	396,599	91,822	230,096	29,662	61,084	39,580							
1910	1,022,373	50,469	52,606	31,015	4,460,306	1,698	22	15,632	20,244	15,402	151,438	1,840,447	210,756	4,275	849,146	151,050	151,252	5,804	4,135,539	74,306	1,121,075	823,183	435,782	66,330	208,342	25,410	60,280	32,064							
1911	285,109	5,783	11,160	4,209	3,637,562	184	402	13,087	17,040	16,555	186,894	1,534,451	173,296	3,212	476,532	80,871	94,553	4,379	2,973,526	57,358	1,151,516	769,926	474,025	143,269	137,106	40,900	59,547	30,771							
1912	1,975,505	82,420	113,521	33,326	2,524,371	1,613	27	16,386	10,913	17,645	150,414	994,212	113,060	3,717	241,969	131,928	119,867	4,156	3,317,364	54,627	1,139,404	679,646	319,544	111,852	163,786	15,904	64,265	39,631							
1913	1,769,432	56,236	77,938	38,037	3,915,376	951	118	16,548	14,425	20,208	35,230	2,085,588	242,837	4,829	570,271	182,223	103,935	4,273	4,092,531	58,897	1,037,936	744,906	375,544	156,349	152,608	49,423	66,841	48,801							
1914	1,585,087	43,607	80,653	24,960	4,260,673	727	66	16,014	13,181	36,200	20,336	1,922,633	225,847	3,230	629,900	78,893	102,193	3,363	3,777,391	51,164	1,058,750	819,949	335,453	113,803	179,127	37,149	65,511	53,064							
1915	414,438	2,454	4,568	3,562	2,003,463	529	23	7,439	6,144	9,800	12,238	1,152,516	140,496	2,123	231,062	53,470	53,858	3,012	3,131,395	59,008	1,210,941	921,833	299,701	77,196	98,126	29,815	48,965	39,437							
1916	2,463,141	108,664	173,210	76,957	3,018,934	1,668	...	19,457	5,331	37,511	24,264	1,579,514	176,973	3,506	231,967	15,530	145,279	5,115	1,876,184	23,171	1,051,212	867,221	227,545	68,205	112,217	39,409	50,278	62,033							
1917	1,035,268	44,688	108,518	35,056	4,188,586	595	210	22,139	10,725	28,628	76,656	2,704,211	307,714	4,019	107,576	16,242	153,895	4,556	1,838,511	39,125	1,356,837	944,282	400,999	45,316	61,058	54,358	54,017	78,793							
1918	104,509	3,632	7,069	1,755	4,105,974	20	1,080	11,083	10,531	11,628	101,445	1,674,829	189,978	5,529	113,142	13,129	92,230	3,541	1,725,081	44,491	1,267,641	859,948	313,237	56,717	49,053	74,415	60,559	105,466							

‡ Including 75 tons crushed in New South Wales.

Table No. VI.

AVERAGE PRODUCE PER ACRE OF PRINCIPAL CROPS IN QUEENSLAND—RETURN FOR TEN YEARS.

Year.	GRAIN CROPS.							POTATOES.		Pumpkins & Melons.	Cotton Unginned.	SUGAR.		Arrowroot (Tubers).	Tobacco (Cured Leaf).	Coffee.	Hay (all Kinds).	Grapes.	Bananas.	Pineapples.	Oranges.	Mangoes.	Strawberries.	Apples.	Market Garden.	Gardens and Orchards.
	Wheat.	Oats.	Barley.		Maize.	Rye.	Rice.	English.	Sweet.			Tons of Cane per Acre Crushed.	Tons of Sugar per Acre Crushed.													
			Malting.	Other.																						
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Tons.	Tons.	Tons.	Lb.	Tons.	Tons.	Tons.	Lb.	Lb.	Tons.	Lb.	Bunches.	Doz.	Bushels.	Bushels.	Quarts.	Bushels	£	£
1909 .	13·41	17·93	13·92	15·87	18·96	14·37	...	1·76	4·35	2·87	254	14·53	1·68	6·45	757	459	1·34	3,018	280	330	186	307	1,534	60	23	11
1910 ...	9·58	19·89	16·33	13·16	24·66	16·17	11·00	1·88	5·53	3·70	329	19·45	2·20	11·68	1,296	863	1·53	2,707	216	379	190	265	1,447	50	26	11
1911 ...	6·64	10·38	9·18	10·07	23·63	9·68	26·80	1·70	5·14	3·05	309	16·02	1·81	8·70	805	444	1·54	2,301	178	319	201	464	1,133	70	26	11
1912 ..	15·81	19·48	15·34	16·28	21·39	15·66	27·00	1·86	3·83	2·88	341	12·72	1·45	10·24	350	705	1·37	2,504	162	263	133	366	1,531	25	27	11
1913 ...	13·34	13·74	12·42	14·90	24·97	10·45	23·60	1·64	4·47	3·08	165	20·29	2·36	12·91	780	1,132	1·36	2,824	140	247	156	443	1,590	59	26	12
1914 ...	12·48	15·99	15·03	13·87	24·16	8·98	22·00	1·91	4·43	3·69	152	17·80	2·09	10·25	1,026	602	1·29	2,951	136	240	139	371	1,690	40	25	11
1915 ...	4·42	7·24	4·83	8·44	13·68	20·35	23·00	1·28	3·61	2·25	170	12·20	1·49	7·51	493	588	0·98	2,556	148	248	132	262	1,090	30	21	9
1916 ...	10·81	16·55	20·19	18·79	16·64	12·73	...	2·18	3·37	2·99	324	20·81	2·33	10·82	733	263	1·29	1,671	113	210	94	245	1,059	31	22	12
1917 ...	8·10	14·89	18·67	18·56	25·37	13·84	35·00	2·06	4·82	3·36	576	24·88	2·83	10·92	372	325	1·60	1,613	148	227	146	156	694	40	27	17
1918 ...	4·83	12·19	6·53	7·50	27·46	10.00	24·55	1·72	4·94	2·53	500	15·01	1·70	13·04	531	486	1·68	1,468	162	214	120	201	721	43	33	23
‡	12·05	18·06	17·57	16·59	21·29	15·21	27·02	1·89	4·71	3·37	331	16·38	1·84	10·46	774	464	1·49	2,203	222	269	161	346	1,479	47	23	13

‡ Average for twenty years (or since statistics have been collected).

Table No. VII.

RETURN showing the AREA and PRODUCE obtained during the YEAR 1918 from CERTAIN OTHER CROPS, details of which are not included in the GENERAL TABLE.

DIVISION.	OTHER FRUITS.																	OTHER VEGETABLES.								OTHER MISCELLANEOUS CROPS.										
																		Beans.					Peas.												
	Almonds.	Apples.	Apricots.	Cherries.	Custard Apples.	Figs.	Gooseberries (Cape).	Lemons.	Mangoes.	Passion Fruit.	Pawpaw.	Peaches.	Pears.	Persimmons.	Plums.	Quinces.	Strawberries.	Nectarines.	Green.	Dried.	Cabbages and Cauliflowers.	Cucumbers.	Onions.	Green.	Dried.	Tomatoes.	Turnips.	Yams.	Broom Millet.	Canary Seed.	Cocoanuts.	Millet (Seed).	India Rubber.	Grass Seed.	Mangel-Wurzel.	Pea Nuts.	Sisal Hemp and Ramie.	Lucerne Seed.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Moreton ...	...	13	3	...	128	4	4	162	63	36	101	84	3	20	15	...	56	...	109	7	225	102	45	160	3	616	18	...	169	...	...	...	...	10	31	2	10	...
Wide Bay ...	...	17	12	...	5	1	...	24	49	1	7	34	5	4	17	...	6	...	3	...	19	...	18	18	51	19	5	...	18	...	...	17	...	518	2	2	...	...
Port Curtis ...	...	...	...	...	10	...	...	23	42	1	9	8	...	1	2	...	2	...	4	...	22	3	...	7	1	19	8	...	4	...	...	...	...	...	2	52	...	...
Edgecumbe ...	...	...	...	...	6	...	...	25	90	...	1	5	...	...	...	...	1	...	2	...	41	52	...	2	...	364	...	...	...	...	...	...	...	...	...	1	...	...
Rockingham ...	...	7	...	...	2	...	...	18	53	...	15	12	...	...	3	...	1	...	5	1	17	3	...	3	...	8	3	...	...	...	20	...	6	...	...	34	...	...
York Peninsula ...	...	...	...	...	8	...	...	4	25	...	6	...	...	...	...	...	...	...	1	...	7	2	...	...	...	3	...	50	...	...	1,054	...	...	...	...	62	...	...
Carpentaria ...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	29	...	...	5	...	13	...	...	...	...	...	...	...	...	...	...	...	...
Central-western ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
South-western ...	...	...	1	...	...	...	...	1	...	...	...	2	...	...	1	...	...	...	...	...	6	1	...	...	...	2	1	...	...	...	...	...	...	...	...	...	...	...
Central ...	...	...	...	...	...	...	...	2	...	...	...	4	...	...	1	...	...	...	...	...	3	...	1	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Maranoa ...	...	...	5	...	...	2	...	12	...	...	...	12	...	...	5	1	...	...	...	1	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Downs *a* ...	...	2,457	83	29	...	1	...	19	...	...	...	1,571	255	1	572	44	2	199	88	6	274	...	24	38	...	257	14	...	44	1,333	...	53	...	140	...	...	...	20
Total Area ...	...	2,494	104	29	159	8	4	290	323	38	139	1,732	263	26	616	45	68	199	213	15	645	163	88	235	55	1,301	49	50	235	1,333	1,074	70	6	668	35	153	10	20
	Lb.	Bushels.	Bushels.	Bushels.	Bushels	Bushels.	Quarts.	Bushels.	Bushels.	Bushels.	Dozens.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Quarts.	Bushels.	Bushels.	Bushels.	Dozens.	Dozens.	Cwt.	Bushels.	Bushels.	Bushels.	Tons.	Tons.	Lb.	Lb.	Dozens.	Bushels.	Tons.	Bushels.	Tons.	Lb.	Cwt.	Lb.
Moreton ...	...	289	173	...	17,090	340	300	7,074	4,517	4,813	36,091	4,138	342	1,412	912	...	41,281	...	10,010	640	47,372	27,743	588	10,410	176	60,246	71	...	69,655	...	...	...	...	15	164	800	nil	...
Wide Bay ...	...	918	1,069	...	491		...	2,169	6,172	320	2,681	2,236	304	235	1,021	...	4,120	...	325	...	4,938	...	239	340	820	4,204	14	...	4,876	...	...	300	...	1,426	13	2,392	...	...
Port Curtis ...	...	...	...	...	429	...	...	1,176	5,692	420	2,547	301	...	21	24	...	2,300	...	258	...	6,399	377	...	277	8	1,290	42	...	2,500	...	...	...	...	...	5	80,834	...	...
Edgecumbe ...	...	...	...	...	166	...	...	2,227	26,166	...	68	149	...	...	...	...	1,022	...	92	...	11,782	26,528	...	110	...	37,181	...	...	...	...	...	...	...	...	...	1,120	...	...
Rockingham ...	...	64	...	...	113	...	...	2,922	9,411	...	4,271	701	...	...	53	...	150	...	150	18	4,797	495	...	6	...	547	21	...	...	...	nil	...	nil	...	...	32,014	...	...
York Peninsula ...	...	...	...	...	482	...	...	921	4,679	...	1,806	...	...	...	...	...	...	...	2	...	3,913	403	...	...	...	331	...	60	...	...	18,836	...	...	...	...	52,288	...	...
Carpentaria ...	...	...	...	...	...	...	...	...	80	...	...	...	...	...	...	...	...	...	12	...	4,056	...	...	62	...	720	...	...	...	...	...	...	...	...	...	...	...	...
Central-western ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
South-western ...	...	...	10	...	...	...	...	17	...	...	...	70	...	...	10	...	...	...	...	...	939	350	...	...	...	29	2	...	...	...	...	...	...	...	...	...	...	...
Central ...	...	...	...	...	...	...	...	79	...	...	...	115	...	...	3	...	...	...	...	...	260	...	40	40	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Maranoa ...	...	...	81	...	...	295	...	714	...	...	...	1	...	...	60	...	6	...	...	100	383	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Downs *a* ...	...	73,144	2,112	564	...	44	...	441	...	...	...	65,529	4,364	26	10,305	504	174	7,070	10 950	146	59,870	...	1,345	2,939	...	30,727	40	...	26,554	810,700	...	1,080	...	1,809	...	...	...	1,080
Total Produce...	...	74,415	3,445	564	18,771	718	300	17,740	56,717	5,553	47,464	73,410	5,010	1,694	12,388	504	49,053	7,070	21,799	904	144,709	55,896	2,212	14,184	1,004	135,275	190	60	103,585	810,700	*18,836	1,380	...	3,250	182	169,448	...	1,080

* Also 1½ tons copra.

a Linseed—4 acres—1,000 lb.

Table No. VIII.

RETURN showing the TOTAL EXTENT of LAND CULTIVATED for HAY, together with the YIELD of HAY, and the AVERAGE YIELD per ACRE in each of the several PETTY SESSIONS DISTRICTS of the STATE during the YEAR 1918.

PETTY SESSIONS DISTRICTS.	HAY.									
	Wheat.		Oats.		Lucerne.		Other.		Total.	
	Acres.	Tons.	Acres.	Tons.	Acres.	Tons.	Acres.	Tons.	Acres.	Tons.
Allora	25	20	37	31	2,409	2,974	17	10	2,488	3,035
Beaudesert	...	...	27	50	641	1,621	8	15	676	1,686
Clifton	...	...	54	51	5,667	5,420	57	170	5,778	5,641
Crow's Nest	...	...	28	47	532	1,176	9	14	569	1,237
Dalby	132	79	25	75	133	278	30	28	320	460
Dugandan	8	18	61	80	1,818	4,499	223	404	2,110	5,001
Esk	1	3	27	23	1,232	4,084	51	125	1,311	4,235
Gatton	...	...	15	19	3,538	7,179	307	557	3,860	7,755
Goombungee	...	...	...	...	73	123	...	...	73	123
Gympie	18	30	104	163	166	481	...	...	288	674
Harrisville	10	10	177	174	2,280	4,671	678	1,026	3,145	5,881
Helidon	5	5	4	6	1,015	1,727	17	24	1,041	1,762
Highfields	11	7	5	10	818	1,376	39	62	873	1,455
Ipswich	...	...	6	10	285	546	35	72	326	628
Kilcoy	...	...	22	39	170	724	2	5	194	768
Killarney	30	20	...	...	1,064	2,218	8	8	1,102	2,246
Laidley	19	20	12	14	4,115	9,090	93	152	4,239	9,276
Lowood	...	...	...	...	587	1,322	17	38	604	1,360
Nanango	27	35	188	147	1,367	2,698	22	21	1,604	2,901
Oakey	46	30	18	32	3,076	4,013	135	161	3,275	4,236
Pittsworth	20	15	25	24	3,600	3,155	88	68	3,733	3,262
Rockhampton	21	27	69	80	714	1,345	17	37	821	1,489
Rosewood	2	1	26	36	1,070	3,082	234	455	1,332	3,574
Toowoomba	6	10	78	76	2,790	3,289	120	57	2,994	3,432
All other Districts	1,521	982	795	772	9,104	17,459	596	900	12,016	20,113
Grand Total 1918	1,902	1,312	1,803	1,959	48,264	84,550	2,803	4,409	54,772	92,230
Grand Total 1917	7,247	7,369	10,901	13,027	73,347	125,642	4,936	7,857	96,431	153,895
Increase, 1918	...	...	...	...	...	...	...	...	...	...
Decrease, 1918	5,345	6,057	9,098	11,068	25,083	41,092	2,133	3,448	41,659	61,665
Average Yield per Acre	0·69		1·09		1·75		1·57		1·68	

Table No. IX.

RETURN showing the TOTAL EXTENT of LAND CULTIVATED for GREEN CROPS in each of the several PETTY SESSIONS DISTRICTS of the STATE during the YEAR 1918.

PETTY SESSIONS DISTRICTS.	GREEN CROPS.				
	Wheat.	Oats.	Lucerne.	Other.	Total of all Kinds.
	Acres.	Acres.	Acres.	Acres.	Acres.
Allora	916	104	3,557	404	4,981
Beaudesert	49	337	696	470	1,552
Brisbane A	20	77	173	877	1,147
Clifton	3,263	997	5,428	3,274	12,962
Crow's Nest	55	147	111	343	656
Dalby	168	126	26	482	802
Dugandan	70	443	259	1,318	2,090
Esk	94	572	1,130	999	2,795
Gatton	82	119	266	951	1,418
Goombungee	...	...	641	87	728
Gympie	55	350	149	435	989
Harrisville	21	476	212	841	1,550
Helidon	18	85	157	263	523
Highfields	101	193	13	207	514
Ipswich	4	82	51	427	564
Kilcoy	38	126	63	83	310
Killarney	1,603	171	2,866	647	5,287
Laidley	45	44	387	628	1,104
Lowood	27	192	226	858	1,303
Nanango	332	759	203	962	2,256
Oakey	228	1,038	1,467	765	3,498
Pittsworth	169	387	1,246	2,014	3,816
Rosewood	27	497	626	1,839	2,989
Toowoomba	135	796	4,052	606	5,589
Townshend	26	151	48	1,316	1,541
Warwick	6,059	593	4,290	1,783	13,325
All other Districts	4,519	2,247	1,928	7,652	16,346
Grand Total 1918	18,724	11,109	30,271	30,531	90,635
Grand Total 1917	16,509	16,439	25,462	29,499	87,909
Increase, 1918	2 215	...	4,809	1,032	2,726
Decrease, 1918	...	5,330	...	...	...

Table No. X.

AVERAGE YIELD PER ACRE OF CROPS IN EACH DIVISION OF THE STATE FOR THE YEAR 1918.

Division.	GRAIN CROPS.							POTATOES.		Sugar-cane (to Acres Crushed)	Cotton.	Arrow-root (Tuber).	Tobacco (Dried Leaf).	Coffee.	Pump-kins and Melons.	Hay of all Kinds.	Grapes.	Bananas.	Pine-apples.	Oranges.
	Wheat.	Oats.	Barley, Malting.	Barley, Other.	Maize.	Rye.	Rice.	English.	Sweet.											
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Tons.	Tons.	Tons.	Lb.	Tons.	Lb.	Lb.	Tons.	Tons.	Lb.	Bunches.	Dozen.	Bushels.
Moreton	12·19	4·43	...	12·00	26·00	10·00	12·00	1·47	5·39	16·42	656	13·12	1,018	447	2·46	2·26	1,833	176	226	146
Wide Bay	6·11	8·55	3·00	3·00	29·91	...	...	·49	4·67	18·53	376	1·50	...	750	3·85	2·11	2,257	179	163	112
Port Curtis	...	...	...	...	17·84	...	...	1·62	2·27	12·41	563	1·00	...	...	2·71	1·88	1,240	111	161	101
Edgecumbe	...	...	...	...	22·07	...	...	2·46	2·61	13·89	1,990	...	751	175	1·82	1·43	1,630	112	124	64
Rockingham	...	...	...	...	30·17	...	24·84	1·45	4·89	13·70	...	...	150	1,120	2·30	1·04	3,050	58	126	120
York Peninsula	...	...	...	...	21·61	...	...	...	2·80	14·68	...	...	...	...	2·50	...	...	122	245	86
Carpentaria	...	...	...	...	12·26	...	...	1·00	1·25	...	...	...	...	...	1·33	...	1,640	58	...	76
Central-western	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
South-western	...	...	...	...	9·43	...	...	1·82	...	...	...	...	...	...	1·33	0·64	3,489	...	...	46
Central	2·60	...	...	...	17·50	...	...	2·13	2·00	...	631	...	...	...	1·50	0·78	1,848	...	...	126
Maranoa	4·32	...	...	...	10·91	...	...	1·55	1·75	...	493	...	...	...	2·05	0·65	570	...	...	57
Downs	5·06	15·44	6·57	7·52	27·40	...	...	2·66	10·00	...	315	...	473	...	2·36	1·20	1,750	...	...	68
TOTAL AVERAGE YIELD, 1918	4·83	12·19	6·53	7·50	27·46	10·00	24·55	1·72	4·94	15·01	500	13·04	531	486	2·53	1·68	1,468	162	214	120
„ „ „ 1917	8·10	14·89	18·67	18·56	25·37	13·84	35·00	2·06	4·82	24·88	576	10·92	372	325	3·36	1·60	1,613	148	227	146
INCREASE, 191	...	...	...	...	2·09	...	...	...	0·12	...	...	2·12	159	161	...	0·08	...	14	...	...
DECREASE, 1918	3·27	2·70	12·14	11·06	...	3·84	10·45	0·34	...	9·87	76	...	...	...	0·83	...	145	...	13	26

Table No. XI.

AREA, YIELD, AND VALUE OF CROPS, 1918.

Description of Crop.	Area.	Yield.		Value.
	Acres.			£
Cereals — Barley — Malting	1,082	7,069	bushels	1,237
Cereals — Barley — Other	234	1,755	,,	307
Cereals — Maize	149,505	4,105,974	,,	1,026,494
Cereals — Oats	298	3,632	,,	620
Cereals — Rye	2	20	,,	3
Cereals — Wheat	21,637	104,509	,,	23,515
Cereals — Other Cereals—Rice	44	1,080	,,	216
Grass Seed	668	3,250	,,	569
Green Forage (all kinds)	90,635	...		543,810
Hay — Lucerne	48,264	84,550	tons	486,162
Hay — Oaten	1,803	1,959	,,	12,738
Hay — Wheaten	1,902	1,312	,,	7,216
Hay — Other	2,803	4,409	,,	24,250
Straw — Oaten	...	42	,,	126
Straw — Wheaten	...	321	,,	963
Straw — Other	...	12	,,	36
Pulse — Beans	15	904	bushels	320
Pulse — Peas	55	1,004	,,	427
Root Crops — Arrowroot (Tubers)	424	5,529	tons	5,529
Root Crops — Mangolds	35	182	,,	637
Root Crops — Onions	88	2,212	cwt.	1,770
Root Crops — Potatoes	6,434	11,083	tons	102,241
Root Crops — ,, Sweet	2,132	10,531	,,	38,965
Root Crops — Cassava	26	86	,,	86
Root Crops — Turnips (including Swede Turnips)	49	190	,,	950
Root Crops — Other (Yams)	50	60	,,	222
Root Crops — Ginger	...	...		...
Grapes, Productive — For table use	1,175	1,376,479	lb.	14,338
Grapes, Productive — For wine		348,602	,,	3,631
Grapes, Productive — For drying purposes	...	...		...
		44,491 (Wine made)	gallons	
,, Unproductive	112	...		...
Sugar-cane, Productive	111,872	1,674,829	tons	2,733,268
,, Unproductive	48,962	...		...
Tobacco	213	113,142	lb.	7,714
Market Gardens	1,814	...		60,559
Orchards and Fruit Gardens — Almonds	...	...		...
Orchards and Fruit Gardens — Apples	1,718	74,415	bushels	37,518
Orchards and Fruit Gardens — Apricots	104	3,445	,,	1,722
Orchards and Fruit Gardens — Bananas	7,817	1,267,641	bunches	211,273
Orchards and Fruit Gardens — Cherries	29	564	bushels	317
Orchards and Fruit Gardens — Citrons	10	54	,,	20
Orchards and Fruit Gardens — Custard Apples	159	18,771	,,	9,229
Orchards and Fruit Gardens — Figs	8	718	,,	179
Orchards and Fruit Gardens — Gooseberries (Cape)	4	300	quarts	8
Orchards and Fruit Gardens — Lemons	290	17,740	bushels	14,192
Orchards and Fruit Gardens — Mangoes	282	56,717	,,	36,393
Orchards and Fruit Gardens — Nectarines	199	7,070	,,	2,533
Orchards and Fruit Gardens — Olives	1	11	,,	3
Orchards and Fruit Gardens — Oranges	2,611	313,237	,,	154,008
Orchards and Fruit Gardens — Passion Fruit	38	5,553	,,	3,656
Orchards and Fruit Gardens — Pawpaws	139	47,464	dozens	5,340
Orchards and Fruit Gardens — Peaches	1,732	73,410	bushels	29,976
Orchards and Fruit Gardens — Pears	263	5,010	,,	7,765
Orchards and Fruit Gardens — Persimmons	26	1,694	,,	339
Orchards and Fruit Gardens — Pineapples	4,026	859,948	dozens	111,077
Orchards and Fruit Gardens — Plums	616	12,388	bushels	11,046
Orchards and Fruit Gardens — Quinces	45	504	,,	126
Orchards and Fruit Gardens — Rosellas	2	250	,,	55
Orchards and Fruit Gardens — Strawberries	68	49,053	quarts	7,562
Orchards and Fruit Gardens — Walnuts	3	40	bushels	40
Orchards and Fruit Gardens — Other (Private, &c.)	879	...		18,920
Orchards and Fruit Gardens — Unproductive	2,107	...		...
Other Crops — Broom Millet	235	103,585	lb. straw	2,451
Other Crops — Cabbages	645	144,709	dozens	44,317
Other Crops — Canary Seed	1,333	810,700	lb.	13,512
Other Crops — Cocoanuts	1,074	18,836	dozens	2,355
Other Crops — Coffee	27	13,129	lb.	492
Other Crops — ,, Unproductive	2	...		...
Other Crops — Cotton	203	101,445	,,	1,691
Other Crops — Cowpea	11	75	bushels	37
Other Crops — Cucumbers	163	55,896	dozens	4,192
Other Crops — Green Beans	213	21,799	bushels	7,720
Other Crops — Green Peas	235	14,184	,,	6,028
Other Crops — India Rubber	6	...		...
Other Crops — Lucerne Seed	20	1,080	lb.	81
Other Crops — Millet Seed	70	1,380	bushels	271
Other Crops — Peanuts	153	169,448	lb.	4,236
Other Crops — Pumpkins and Melons	4,603	11,628	tons	78,489
Other Crops — Sisal Hemp	10	...		...
Other Crops — Tomatoes	1,301	135,275	bushels	83,420
Other Crops — Miscellaneous—Linseed	4	1,000	lb.	17
Total under Crop	525,517			£6,011,520
Land in fallow	279,809			
Area under permanent artificially sown grasses	418,467			
New ground broken up during season	8,951			
Previously cropped land lying idle during season	167,789			
Total area of arable land	1,400,533			

Price, 5*s*. 3*d*.]

By Authority: ANTHONY JAMES CUMMING, Government Printer, Brisbane.